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Carolina Phosphates.

The following description of the beds of South Carolina and their management from the *News and Courier* will be read, we think, with interest:

The phosphate rock-bed of South Carolina contains an almost inexhaustible mine of wealth, and "now supplies the civilized world with the chief part of all the phosphate of lime used in the manufacture of commercial fertilizers." It underlies a vast region of country, thirty miles wide and seventy miles in length. The scientists differ in their opinions as to the origin of this great deposit, and vary just as widely in their estimates of the quantity of rock contained in the deposit. There has been a steadily increasing demand for the rock since the shipment of the first cargo in 1868, and from an insignificant beginning phosphate mining has grown into one of the largest and most important industries in the State. The rock forms the bed of many of the rivers leading to the ocean, it underlies the wide stream which surround the sea islands, it crops out of the land at many points, it abounds in fossil remains, it varies in formation and color, it is wonderful in all respects. The most important constituents of phosphate rock are from 55 to 61 per cent. of bone phosphate of lime, 5 to 11 per cent. of carbonate of lime, from ½ to 2 per cent. of sulphuric acid, 35 to 42 per cent. of lime and a number of other elements. The ordinary rock of commerce does not contain less than 55 per cent. of phosphate of lime.

The river deposits are mined with crowbars and pick-tongs and dredges. The land rock, of the mining of which it is intended here to give some account, is excavated with pick and shovel. It is found at a depth of from one to ten feet below the surface of the ground, and in a seam ranging in thickness from a few inches to thirty inches. There are sixteen companies and individuals now engaged in mining the land rock with a joint capital of about $2,000,000. The production of these mines last year was about 270,000 tons of rock.

The country in which the rock is found is generally level, and the soil is moist and soft. The rock is "sounded" for by a long sharp-pointed steel rod. Whenever rock is struck six to eight feet from the surface of the ground, a test pit is sunk to ascertain the thickness of the stratum, and to find whether the rock will analyze up to the market standard. If the stratum is two inches thick it will pay to mine to the depth of seven feet for it; if it is not more than six inches thick it will not pay to mine to any great depth. When rock is found the land is sounded, every 100 feet, and a chart is prepared showing its location and its depth and thickness. Before beginning mining operations the phosphate land is laid off into fields measuring 800 feet long by 600 feet in width, and the lines are run. A platform is built in the centre of the field on which the rock from the mining pits is piled. A railroad is run through the centre of the field alongside the platform, and the miners beginning their excavations on the sides of the field, dig steadily to the centre. A succession of pits measuring six by twelve feet are sunk along the whole line of the field. The dirt from the pits is thrown to the rear, and the rock to the front, and is then rolled to the platform or centre pile in the field The dirt from the next pit is thrown into the pit previously excavated, and the rock is thrown to the front.

This process is kept up until the entire field has been excavated. Every foot of ground is turned up, and a field that has just been mined, with all the trees uprooted, resembles more than anything else the track of a tornado. In some of the fields the mining is very difficult on account of the heavy timber, and the miners in the pits are greatly troubled with water, which, in the rainy season, frequently floods the pits and renders mining impracticable.

From the mines the rock is hauled to the washers in trains of dumping cars. Here the rock is emptied into powerful breakers, armed with steel teeth, where it is crushed into pieces of uniform size It then falls into troughs or tubs resting on an incline. In each of these tubs an octagonal shaft, cased in iron and set with blades or flukes, revolves, giving a spiral motion, which churns the rock around and forces it out of the tubs upon screens. While the rock is in the tubs it is subjected to a continuous and powerful stream of water, which cleanses it of all foreign matter, so that when it is forced out of the tubs it is sized upon a series of screens and separated from all the remaining gravel. It is then piled on platforms or in sheds for shipment. Several of the mining companies have hot air drying sheds where about 15 per cent. of moisture absorbed in washing is expelled from the rock. The hot air for these drying sheds is drawn from a wood-burning furnace, and is forced through the rock by a system of perforated pipes which underlie the bins in which the rock is placed. It is said that in a short time all of the rock will be dried before it leaves the mine, although some miners think that the increased price paid for kiln-dried rock is more than counterbalanced by the loss of weight in drying. Improvements are continually being made, however, in the methods of treating the rock. The first cargo ever shipped from South Carolina was washed at Lamb's by hand, the washers being provided with stiff brushes, with which they got out all the clay and gravel. Now nearly all the work is done by machinery, the capacity of some of the washers being more than 100 tons a day. There are sixteen land phosphate mining companies now at work in this state.

A good farmer must combine the judgment of many different vocations; he must be a good financier, on a small scale to be sure, but still a good one; also a good manager of labor; must combine the judgment of the grazier, the butcher, the gardener, and the merchant; he must also have that judgment about the conditions of the land and crops for which there is no written rule, and which careful observation only gives.

Notes from Abroad.

[From our Correspondent in Paris.]

Ensilage in France is now confined to experiments as to dispensing with silos in masonry—all a matter of pounds, shillings and pence. The secret of ensilage resides in perfect compression of the mass and exclusion of the air. These secured, the green forage can be conserved under a shed or in the open air. The first attempts at ensilage failed, because efforts were made only to exclude the air. It was Mr. Goffart demonstrated the necessity of heavy and continuous pressure at the same time. Some experiments made at the agricultural station of Münster, demonstrate that maize is the best forage for ensilage; that the total loss can reach as high as 39 per cent. The proportion of fatty matters augment during fermentation, while those of a non-nitrogenous character diminish. The sugar, gum, dextrine, and similar carbon solubles, are decomposed and lost in the form of gas, but aromatics and organic acids are formed, which compensate the loss. Further, the maize is rendered more profitable and more easy of digestion.

THE CATTLE SHOW just held has been very successful, but it must never be viewed as other than a display of fat farm stock, a gathering for the butchers. For breeding cattle it would be ever best to exhibit these apart, in a special annex. The display of implements was especially fine, and the bringing together of cylinders for flour mills, instead of the old burr stones, would alone pay the nation for the expense of the show. There was something new in churns and in chaffing machines. The exhibition of farm-school requisites was a novelty. The prize ox was a Durham-Charolais, age 33 months 15 days; weight, 18¼ cwts.; the spine, though it had the curved line of beauty, was not so graceful as if perfectly straight. In sheep, the Dishleys won; the three, aged 10 months, and less fleeces, weighed 3¼ cwts.; in pigs, the Yorkshires carried off the blue ribbon; the prize, aged 12 months and 15 days; weight, 5 cwts. 19 lbs.

The scholastic part of the show consisted of botanical collections on the part of masters and pupils of the primary schools where agriculture is taught. There were also exhibited, and recompensed, specimens of the geology and insectology of the locality, and maps of the districts. Another feature, and which will come better into play next year, was the reports, by teachers and pupils, on local systems of culture, manners, customs, habits, wages, etc., of their region. A collection of such documents, handed over to an editor with the patience of a Benedictine, to "boil down" and classify, would be worth cart-loads of official commissioners' reports. Hitherto the government has rather leaned at all the agricultural shows, towards rewarding the large agriculturists. So far excellent—for the future rewards will be made to suit the small farmers and their wants, as well as kitchen gardens and laborers' well-kept homes.

ITEMS.—Farmers and sugar manufacturers are far from being reconciled on the subject of beet. The manufacturers desire it to be plainly understood, that their mills exist for manufacturing sugar, and not for preparing pulp.

Arbor culture and the replanting of mountains are receiving marked attention. The phylloxera still holds its ground—advancing, not retreating. However, vineyards are being replanted with American stocks, and the foe shows no desire to come back. Those who can do so, intend trying the *summer* irrigation of the vines.

The Agricultural Advantages of Harford County, Maryland.

The Belair *Aegis*, referring to the Easton *Ledger's* effort to show by the testimony of actual settlers the advantages which Talbot County possesses for farming operations, claims equally as great ones for Harford. It says: Without making any invidious comparison with Talbot or any other of our sister counties of Maryland, we think facts warrant the assertion that no county in the State possesses equal advantages with Harford for the enterprising farmer from other States.

Springs and streams of pure cold water abound in every part of the county, and it is unusual to find a farm which can not be divided with water in every field. Fine water powers are abundant, requiring only capital and technical skill to bring them into profitable employment.

The soil is varied, susceptible of the very highest degree of cultivation, and suited to almost any crops. The production of wheat for the last ten years has been from 20 to 40 bushels to the acre; of corn from 10 to 20 barrels; of hay from 1 to 3 tons, and of tobacco from 1,000 to 2,000 lbs. Harford stands first among the counties of the State in the amount of corn produced to the acre, and in fattening cattle is also foremost. Indeed, the excellent quality of Harford beef causes hundreds of our cattle to be shipped annually to Europe. Fruit of all kinds, including peaches, grows to the greatest perfection here, and for garden truck some portions of Harford are unsurpassed. Game of all kinds is abundant. Our waters teem with the finest shad, herring, perch, rock fish, crabs, &c., while myriads of canvas-back and other ducks frequent the rivers that indent our coast, and acquire a finer flavor than anywhere else in the world, by feeding upon the wild celery found in our waters.

The finest timber abounds here. Oak, hickory, chestnut, walnut, ash, poplar, locust, &c., attain their best development, and the timber of Harford is bought and shipped to manufactories in Baltimore, Wilmington and other places, where it is considered the best that can be obtained.

The facilities for getting crops to market are all that are needed, and will soon be increased. The Philadelphia, Wilmington and Baltimore Railroad traverses our eastern border, the Northern Central our western border and the Maryland Central the centre of the county. The Baltimore and Ohio's

Philadelphia extension is also in course of construction, and a branch of the Pennsylvania Railroad will probably soon be built through Harford. Besides these means of rapid transit to the great markets of the country, the lower part of our county has the advantage of water transportation to Philadelphia, Baltimore and New York.

On the score of health, also, much can be said for Harford. Of course on the level lands near tide-water malaria is not unknown, but diseases of that character appear to be decreasing in violence as the lands are drained and cultivated. A few miles from the rivers and bay the land becomes rolling, picturesque and free from malaria.

Hundreds of beautiful sites can be found for dwelling houses, from which extended and diversified views can be had of as fair a land as the sun ever shone upon.

Harford, too, is a county of churches. Every denomination is represented here by beautiful and comfortable places of worship. Our public schools are kept open four full terms a year, and are equal to any in the State. The rate of taxation is low and the county affairs economically administered. Our public roads are for the most of the year smooth and well-kept, comparing favorably with those of any county in the State.

With all the advantages we have named land in Harford sells at an average of only $40 an acre, with fair improvements. That money can be made here at farming, one man can be cited as an instance, who in twenty years, on a 300 acre farm, has cleared $50,000.

The people of Harford are noted for their intelligence, refinement and hospitality. Strangers who come here to settle and identify themselves with our people are treated with kindness and courtesy and are valued at what they are in themselves morally and socially. If they can bring a little capital and engage in manufacturing of any kind they will be doubly welcome.

Preparation for Corn.

When the season for corn opens it is, says a Western paper, the signal for a busy time in every department of the farm as other matters must be cleared up in order to get in the crop that requires an early start and a favorable season. In some sections it is the custom to use a fertilizer in the hills of corn as a stimulant, but such a practice is not necessary if the soil is rich and in good condition. The first thing to be done is to prepare the soil, which means something more than ploughing it, and then putting in the seed. If the soil is light and somewhat sandy, a single thorough plowing will suffice, but if it is heavy, the land should not only be plowed but broken up by passing the cultivator over the field once or twice. Corn is a plant that feeds near the surface but sends down a tap root for moisture to quite a considerable distance. This tendency of corn to keep near the surface enables it to quickly appropriate any nutritive matter that may be afforded it, but if the soil is poor and lightly plowed, the roots will feed throughout that portion of the soil which contains the greater proportion of those elements that are necessary for the growth and maturity of the crop, and the rootlets will also be sent upwards to the surface in order to procure moisture from the condensation of that which is deposited at night and when the atmosphere is very humid.

It is apparent, therefore, that the finer the condition of the soil the easier the facilities allowed the plants for feeding, and the greater the feeding room the greater the quantity of roots, which are essential during times of drought and lack of moisture, to say nothing of the vigorous growth and rapid progress of the corn by reason of its greater root surface. Many controversies regarding deep and shallow plowing would perhaps find an amicable solution if the nature of the soil and method of plowing were considered in exact relation to each other. Some farmers have found deep plowing highly advantageous, especially on clayey soils, simply because the roots were permitted to search through a larger quantity of soil for food, and also to more easily procure moisture from below as well as through absorption of moisture by the soil. Other farmers have found shallow plowing more preferable, especially on light soils, which assists in the establishment of a greater mass of roots near the surface, while the porosity of the soil and its light nature enables the corn to go downward as easily as may be desired.

While it may be admitted that corn thrives well on nearly all kinds of soil, the difficulty is that we do not know what the seasons may be. The main object should be to give it an early start and push it forward in the beginning, for then it will better endure the drought, and mature before the frost can catch it. In order to do so, prepare the soil thoroughly in the beginning, have it fine, cultivate often and well, and allow no grass or weeds to occupy the field for even a day. Keep the cultivator in motion and the corn growing.

Sets of Grass.

Experiments made by a few members of the Elmira Farmers' Club in the last three years seem to justify the conclusion that sowing many varieties of grass seeds is the best way to secure even and full setting of grasses. A single trial made by President McCann with six varieties in the autumn of 1882, he pronounces the most satisfactory seeding in all his extended experience covering a long term of years. He found every foot of the ground completely occupied in the autumn of 1883 and all the grasses then standing went into the winter in fine condition. There is nothing new in this doctrine of seeding except as more varieties are embraced than in ordinary practice. Explanation of success may be found partly in the fact that soil unfitted for one kind may nourish and support another; thus when a mixture embracing many varieties is sown one or another will be reasonably sure to catch, and in this way the entire surface will be occupied. The mixtures sown by the members of the club have been obtained from Mr. Daniel Batchelor, of Utica, who is an authority on grasses. He has studied their growth, their habits, their distinguishing traits, and as a consequence has acquired a degree of skill in mixing seeds not obtained by those whose sole interest is in selling. Of course the varieties may be found elsewhere and mixed to suit. The main point is to get so many kinds of seeds upon the soil that some one or more will take root and make that thick setting which is essential to permanent sod. All observing farmers recognize the fact that grass is the foundation of successful agriculture. Then the first requirement is to obtain success with grasses. This done the land becomes profitable for other uses because it is supplied with vegetable matter whenever the sod is turned under. Good sod is good manure, and in no other way can good manure in full supply be obtained so cheaply. This is a subject which should interest every farmer, and the time of year is favorable now for giving it full consideration. Timothy and clover, the common mixture, does not meet all the requirements whatever they may have done in the past. Under the system of cultivation employed by Northern farmers the tendency is to deprivation of vegetable matter in the soil, but with thick and full seeding an immense amount of roots can be secured in the soil with a good catch of the seeds, and the good catch in turn is secured by an extended mixture of varieties.

The success of grasses depends very much on the supply of moisture. Liberal spring rains, with mild weather, make a thrifty growth in meadow or pasture.

Amber Sugar Cane.

The *Prairie Farmer* has received from Professor W. A. Henry, Professor of Agriculture in the University of Wisconsin, and Mr. Magnus Swenson, chemist of that institution, a box containing a good sample of sugar made from sorghum. A slip accompanying it has the following:

The accompanying sample of sugar was manufactured from amber cane grown on the experimental farm in 1882. The data of the largest plat of cane made into sugar this year is as follows:

Area of plat		8 3-5 acres.
Weight of stripped cane	75,263	pounds
Per cent. of cane sugar in juice.	9 89	
Per cent. of glucose in juice	3.95	

Amount of sugar separated:

First crystallization	2,116½	pounds.
Second crystallization	730	"
Total amount of sugar	2,846½	"

Syrup drained from the sugar, 315 gallons.
Seed obtained, 76 bushels of 51 pounds each.

The cost of manufacturing the unrefined sugar was for all expenses, including the cost of the cane, but excepting the pay of the chemist in charge, 4½ cents per pound. The value of the cane seed is not taken into account in the above estimate.

As the means of refining were very imperfect, the samples sent out vary greatly in color; some are nearly equal to light "Yellow C" in color and appearance, while most are brown in color, being but little superior to the unrefined as first manufactured.

The Wheat Outlook

The President sent to the Senate on the 23d ultimo, a report from the Secretary of State in reply to a resolution of the Senate of February 29th, requesting information as to the average production, consumption, exportation and importation of wheat, rye, corn and cotton in foreign countries, their probable requirements of such products from the United States before the crops of the coming crop year are ready, and other information bearing on the question of the demand for the grain and cotton products of the United States. The Secretary, in his report, says it is impossible to get statistics absolutely correct. His information, therefore, is only approximate. Continuing his report, he says: "Whether the present depressed condition of the wheat trade of Europe is occasioned by the several countries drawing upon their reserve stock, for local economic reasons or to affect prices, or legislation, or public opinion, or for some other cause, cannot be asserted with certainty; but this important fact remains, that the calculations and estimates herewith submitted prove, as far as statistics can prove under the circumstances, that the stock of wheat on hand in Europe at the close of 1883 did not materially differ from the stock on hand at the close of the previous year: that the wants of Europe are as imperative and as great as they were in 1883, and that the demands upon the United States should naturally be as great as they were in 1883. How long Europe may or can draw upon her reserve stock, or what are the exact considerations which control the several countries, especially the United Kingdom—which may be said to regulate the wheat markets of the world—time alone can develop." He also says: "The most liberal allowance for the wheat output necessary to the world's consumption shows that the United States should be drawn upon during the present year for 177,000,000 bushels in round numbers, against 198,000,000 from all other wheat-growing countries. It thus appears that the United States, instead of being controlled by, should be able to control foreign markets."

The Secretary says he is unable to answer that portion of the Senate resolution which inquired whether political or other complications in or between foreign countries, or other causes of like character are likely to occur in the near future calculated to influence the market value of American productions or their cost to cosumers.

English and American Agriculture.

Whilst the number of persons engaged in agriculture in this country has increased about twenty-five per cent. within the last twenty years there has been a great shrinkage in English agriculture. There are only 1,883,184 persons, or one in twenty, of the population engaged in agricultural pursuits to-day, 727,270, or thirty-one per cent. less than twenty years ago, and there are also fewer men in the factories. The producing classes in England have not increased, and in 1881 the producers and non-producers were nearly equal in point of numbers; at this time the latter outnumber the former three to two. It is thus evident that a large proportion are living on the community supported by the working classes, and are mere parasitic drones. Some of the non-producers, of course, live on their wealth, but these form but a small percentage. This is a serious condition of affairs.

Live Stock.

The Feed and the Breed.

Before a man can weed out the unprofitable cows in his herd he must know which they are, and this cannot be ascertained without a test. There are various ways of making tests, but the best of all is to weigh every milking and record it. Then there is no guess work about it, no estimating and no uncertainty. But as the average dairyman hates "trouble" or "bother," and as it is too much to expect a radical reform at once, even if one hopes for a reform at all, it may be safer to advise weighing once a week, morning and evening, record it, and base an estimate upon that. When the feed, care and weather are regular the estimate will come pretty near the truth. Trials of a week continuously during each month will also furnish some basis for an estimate, and anything in this line is a little better than nothing. At any rate the man who obstinately refuses to take any pains to post himself in such matters deserves no success and no pity.

To feed regularly and plentifully is the most important point of all. Every cow should do her best, and to do this she must be fed up to her capacity, and all the while. It is next to insanity to attempt to succeed by feeding less than the cow can dispose of properly. She is a machine for working fodder into dairy products, and if not worked to her capacity then it is a constant waste of time and effort. The gain in feeding too little is a constant loss. Every cow in milk should be moderately fat; then she is comfortable and contented, and only under such circumstances can she be expected to do her best. How does a hungry man feel? Perhaps few can tell in rural life, because not many have tried such hunger as live stock in mean hands must often endure. A man an hour or two behind his meals has a gnawing at the stomach that irritates, but it never lasts long enough, except with the very poor, to make him lose flesh and affect his strength. But fancy such a life for a moment. Constant, chronic hunger, insufficient, and often the poorest grade of food, and this continued week after week and month after month, until there is little flesh or strength left! That is the fate of thousands of cows and horses—never quite enough, always a hankering for more.—*Breeder's Gazette.*

Stock Farming South.—Col. Richard Peters, of Atlanta, thinks that stock farming pays in Georgia. Last year he sold $1,800 worth of Angora kids, $800 worth of yearling Jersey bulls, $550 worth of Essex pigs, $1,500 worth of wheat, besides an unsold increase of flocks and herds amounting to at least $5,000. His farm grows richer year by year, and the basis of its improvent is clover plowed under.

The Trotting Stallion Hannis, (Record 2.17¼).

Hannis, the celebrated trotting stallion so well known through Maryland and the adjacent States is a chestnut in color, 15½ hands high, symmetrical in proportion and of powerful conformation. He is described as a "natural trotter from wire to wire, very pure gaited and so easy moving that he always elicited the unqualified admiration of the best judges of what constitute a genuine trotter."

He was foaled in 1868, and was sired by Mambrino Pilot—a brown horse foaled in 1859—and bred by Dr. H. L. Herr, of Lexington, Ky.; he by Mambrino Chief, dam Juliet, by Pilot, Jr.; 2d dam by Webster, (Thoroughbred,) son of Modoc; 3d dam by Blackburn's Whip. The dam of Hannis, says the *Thoroughbred Stock Journal*, to which we are indebted for this sketch, was Lady Stewart, record 2.32, a game roadster and track mare that could trot all day in from 2.36 to 2.40. She was bred in Vermont, and was doubtless a Black Hawk of the stylish and fast Morgan family.

Mambrino Pilot sired Hannis, 2.17¼; Mambrino Gift, 2.20; Aemulus, 2.25; Billy Platter, 2.26; David Wallace, 2.28; Morning, 2.30.

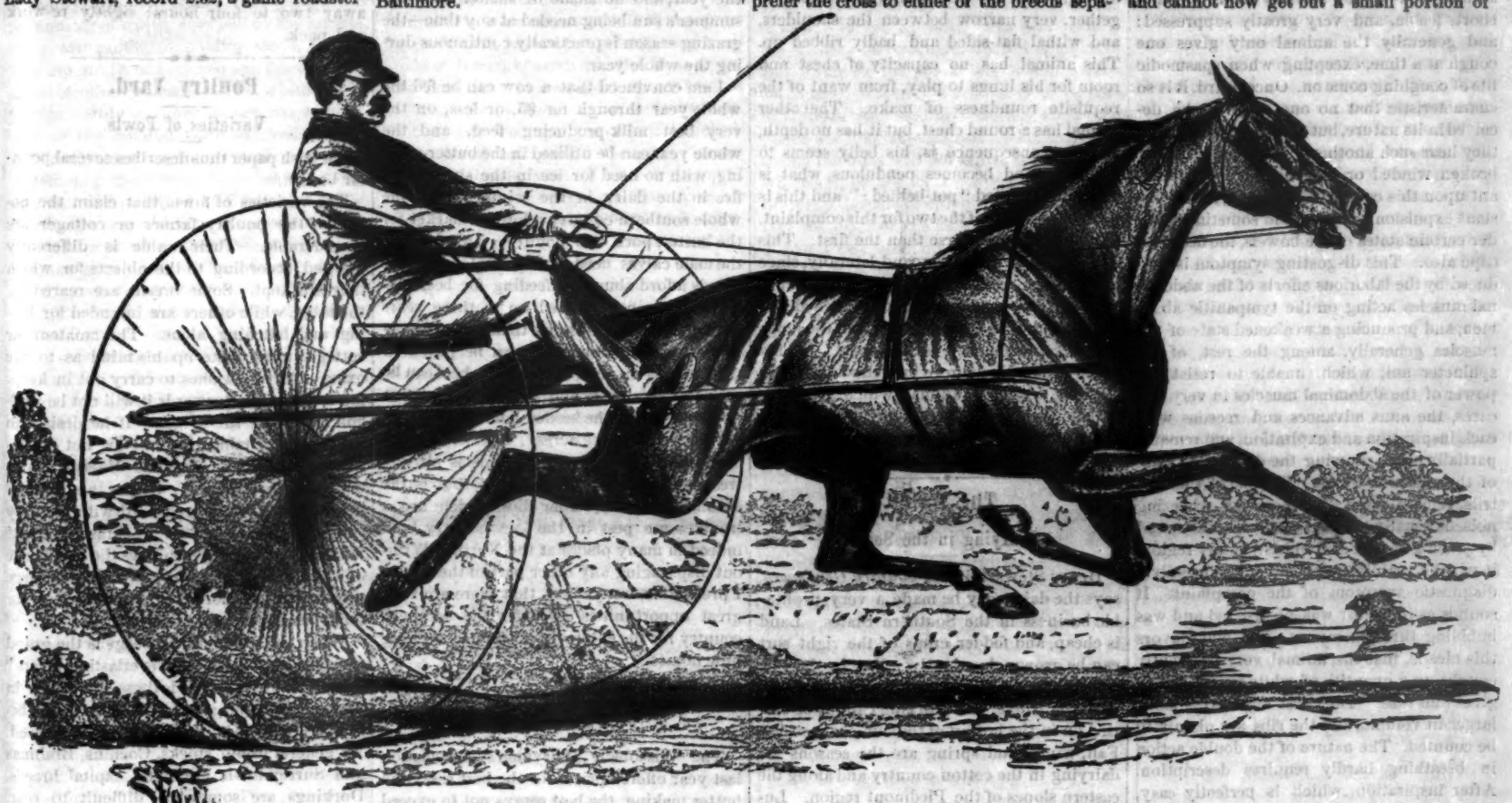
Pilot, Jr., got John Morgan, 2 24, and six others in the 2.30 list; also got the dam of Maud S., 2.10¼, and Jay Eye See, five year old, record 2.10¼.

Mambrino Chief, (grand sire of Hannis,) got Lady Thorn, 2.18½; Woodford Mambrino, 2.21¼, and four others that beat 2.30. He was a bay horse, foaled 1844, bred in New York, got by Mambrino Paymaster, son of Mambrino, he by imported Messenger. He died in Kentucky, March 28th, 1862. Mambrino also sired Abdallah, the sire of Rysdyk's Hambletonian.

The first appearance of Hannis on the turf was at Suffolk Park, May 15th, 1877, in the singular class of 2.25 for a green horse; but he won third money with a reserve of speed. He subsequently trotted numerous races in the Western Circuit, evidently for experience, and was not allowed to take a *record* until the entries for the grand circuit closed; he then cut loose, scoring his first victory at Chicago, and won all his races, sustaining only a single defeat. He was campaigned successfully several seasons and his winnings amounted to $31,250, irrespective o° second, third and fourth moneys.

It is said no horse ever on the turf showed the ability to stand campaigning as he did, trotting many severe races and traveling thousands of miles, year in and year out, and now that he has been retired to the stud, there is every reason for believing that with his fine breeding, great speed, purity of gait and wonderful endurance, he will make himself equally famous, as a sire of trotters and roadsters. Other sons of Mambrino Pilot, such as Mambrino Gift, Calbain, &c., have proved very prepotent, and Hannis is pronounced the best son of his sire. Being descended from large, rangy stock, his colts will have plenty of size as well as finish. August 25th, 1880, trotting against Charley Ford, Hannis made his best time of 2.17¾.

As noted above this splendid horse is now in the stud, and is making a season in Baltimore.



THE TROTTING STALLION HANNIS, (RECORD 2.17¼), THE PROPERTY OF MANN & LOGAN, BALTIMORE.

Shropshiredown Sheep.

A correspondent in the *Sheep Breeder and Wool Grower* gives his experience as follows:

"I have been acquainted with this breed of sheep in the State of New York for the past twelve years, and brought some to Iowa in the fall of 1878. My father, who was then living in Black Hawk county, Iowa, had several hundred of the common Merinos that he had bought for two or three dollars per head. I told him I had a breed of sheep in New York that I thought by crossing on his ewes would greatly improve the increase, and I sent him out four good rams. It was late in the season before he got them, and consequently got but a few lambs from them the next spring. But what few he got showed a very marked improvement. The Shropshire grades at their first shearing were at least one-third heavier and sheared from one-fourth to one-third more wool, of a better quality, and entirely free from the tar and gum that adds largely to the make-up of the Merino fleece. We butchered some of the grades, and sold some to our village butcher, and all pronounced them a good quality of mutton. Some of the best yearlings sheared twelve pounds of wool, and weighed 140 pounds, and two weighed a little over 150 pounds. The next season I brought out a small flock of full-blood Shropshire ewes. In the summer of 1880 I moved my family here, and brought a carload of Shropshires. In the fall of 1881 I sold my farm in Tioga county, N. Y., and brought the balance of my flock. I have refused to sell but very few ewes, until within about a year, and now have a good flock of over 300 head of full bloods, besides over 100 head of grades, from one-half to seven-eighths Shropshire. I was brought up on a farm, and have always been a farmer, and am now. I have been acquainted with sheep since I was old enough to know anything, as my father always kept a large flock while I was a boy at home. I have raised, handled, bought and sold Merinos, Bakewells, Cotswolds, Southdowns, and other grades, by different crosses, and have shipped a great many carloads to New York city. The Merino crossed with the Cotswold and also with Southdown, make a good sheep for both mutton and wool. I prefer the cross to either of the breeds separately. The Merino ram crossed on the Cotswold ewe, produces a better mutton sheep than a full blood Cotswold, as the fat is not all on the outside, and it makes the best selling wether I could find to take to New York. Not that the mutton was equal to the Southdown, but the fleece, or rather pelt, was so much heavier, the butchers could make more out of the pelts and carcass than the other breeds would average, and they used to regret that they could not color their legs brown or black. I don't say that the Shropshiredowns are the best breed of sheep, for many would contradict me. But I say with sincerity I like them the best of any of the breeds I have handled. I considered well and examined closely those on exhibition at the New York State Fairs for several years before I took hold of them, and went slow on them at first, buying only one ram and four ewes, and testing them with my other sheep, and trying what the cross produced on fine, coarse and medium wooled ones, and I have not yet found the sheep they will not improve for wool and mutton combined, which I consider is what the general farmer wants. For the past few years I have examined a good many imported sheep of the Oxford and Hampshire Downs (cousins of the Shrops), but in my estimation they do not combine as many good points as the Shrops. Their wool is coarser, likewise their carcass, they are longer legged, and from appearances (I have never bred or owned any of them) they are not as hardy nor as easy keepers. For a hardy sheep give me one with a close heavy fleece, not one that parts on the back to take in the cold and storms. The best and most profitable sheep I have yet found, is a cross with the Shropshire, the Merino and a hardier sheep than either pure bred. The cheapest way to get them is to use a Shropshire ram with Merino ewes. But a better way, if the ewes were not so expensive, would be to use Shropshire ewes, and select the heaviest bodied and closest fleeced ram from the French Merino, as the Shropshires are the best of mothers, producing much more milk than the Merino ewe. The lambs would be stronger at birth, and mature faster and earlier. From such a cross we can get just the quality of wool our woolen mills prefer, and cannot now get but a small portion of what they want; and a carcass when well fattened that will pay to send across the ocean for Englishmen to eat, as the legs and face will be of the right color. Give us sheep farmers protection from dogs, wolves and demagogues at home, and from cheap wool abroad, and we will soon have enough of the Shropshire-Merino sheep to furnish our woolen mills with all the wool they can use, and the American people, and likewise English, with all the mutton they want. And it will soon be so cheap that none need go without either.

Broken Wind.

Being asked to give the symptoms of what is commonly called broken wind in horses; also to state how far asthma in man and broken wind in horses may be considered analogous diseases; and whether broken wind is an hereditary affection, the *Prairie Farmer* says:

The common symptoms are as follows: The act of inspiration is performed very readily; but in expiration there is a very peculiar double heave of the flanks, and this is evidently caused by the abdominal muscles being called into play. Now, if we consider that the act of expiration in the naturally healthy subject is mainly performed through

the elasticity of parts (viz: the ribs and diaphragm) in regaining their position, it will be evident that this extraordinary action of the abdominal muscles must result from the usual means being found insufficient to force the air out of the lungs; and the question then arises, what cause, or variety of causes, may induce the necessity for this appeal for extra assistance, in the act of expiration, to this set of muscles?

The broken-winded horse is usually a voracious feeder, but withall an ill-conditioned, hide-bound looking animal; his coat is generally harsh and staring; he is the victim of indigestion, and his belly is most frequently pendant and tympanitic from flatus (bloated). The hay and oats apparently pass through a bad mill, for they pass from him only half digested. A cough is always present, and this is, indeed, the veriest apology for one; it is so weak that if you were not close to the animal you would scarcely hear it. It is short, feeble, and very greatly suppressed; and generally the animal only gives one cough at a time, excepting when spasmodic fits of coughing come on. Once heard, it is so characteristic that no one can ever be deceived in its nature, but may safely say, when they hear such another, "The horse is either broken winded or becoming so." Attendant upon this cough, in bad cases, is the constant expulsion of flatus, and sometimes, under certain states of the bowels, the feces escape also. This disgusting symptom is produced by the laborious efforts of the abdominal muscles acting on the tympanitic abdomen, and producing a weakened state of the muscles generally, among the rest, of the sphincter ani, which, unable to resist the power of the abdominal muscles in very bad cases, the anus advances and recedes with each inspiration and expiration, and remains partially open, showing the debilitated state of the muscular fibres. The ala of the nostrils remain fixed. A peculiar wheezing noise is usually heard at each expiration, and by placing the ear at the chest, in any region, it will be plainly detected, and is usually a diagnostic symptom of the complaint. It sounds as if the air was obstructed and was bubbling through mucus; and what favors this idea is, that the animal very frequently coughs up a quantity of white mucus which gives him ease. The chest afterwards looks larger in volume, and the ribs are plainly to be counted. The nature of the double action in breathing hardly requires description. After inspiration, which is perfectly easy, there is a pause, and the abdominal muscles act with a jerk, and slowly expel the air from the lungs, as if they were a pair of bellows, and then the belly suddenly drops, and the sudden inspiration begins anew. These symptoms do not always exist in equal intensity; on the contrary, they vary most remarkably, from being dependant on a variety of circumstances, some of which are capable of explanation, while others baffle inquiry. Medical treatment, dieting, exercise, and change of temperature and air, produce the most marked effects on it; and sometimes, without any assignable reason, the most surprising changes for the better or worse take place.

As to how far asthma in man and broken wind in horses may be considered analogous diseases; there are some forms of asthma, especially such as seem to arise from similar causes to broken wind, which do bear a close resemblance. The asthma, which commences in chronic bronchitis, and congestive asthma, are of this kind; but still, in some respects, they differ from broken wind. We must not forget that, in man attacks of asthma are brought on or increased by emotions of the mind and affections of the senses; and that it is, in many cases, with a purely nervous disease, no trace of morbid lesion being found in the chest after death. And again, that there is no case of asthma in man that is not greatly complicated with nervous excitement. Now, in the broken-winded horse, we consider the act of expiration certainly partly spasmodical, although the animal is free from those passions and emotions of the mind which produce attacks of dyspnœa in man. The broken-winded horse is affected like the asthmatic man, by sudden changes of temperature, or states of atmosphere; wherein the quantity of oxygen in a given space of air is more or less altered; and this is the all-important object to the suffering animal, who is straining himself to death to pump as much air into his lungs as will oxygenate the blood. Owing to these circumstances we cannot draw a perfect line of resemblance between broken wind and asthma.

Whether broken wind is hereditary; we think not, excepting as far as breeding from an animal of peculiar conformation may produce a tendency to the disease. There are two kinds of horses which seem most subject to it—one is an animal rather high on his legs, with his elbows and arms close together, very narrow between the shoulders, and withal flat-sided and badly ribbed up. This animal has no capacity of chest and room for his lungs to play, from want of the requisite roundness of make. The other animal has a round chest, but it has no depth, and the consequence is, his belly seems to swell out, and becomes pendulous, what is commonly termed "pot-bellied;" and this is the worst subject of the two for this complaint, although a better horse than the first. This is a chest that cannot expand laterally, since it is circular already, and there is no depth with it. This is also the make to give all the disposition to be a gross feeder, and the lungs may become too large for the chest. Such a horse is more likely to go broken winded than the first described animal, which, from his make, may happen, very likely, to be a moderate feeder, and perhaps good-for-nothing animal.

The Dairy.

Dairying in the South.

Henry Stewart, in the *Country Gentleman*, says the dairy may be made a very profitable business in the Southern States. Land is cheap, and fodder crops of the right sort can be grown abundantly. But in the low country the seasons are reversed as compared with the North, and dairying cannot be carried on in the hottest of the summer weather. Fall, winter and spring are the seasons for dairying in the cotton country and along the eastern slopes of the Piedmont region. Lucerne (alfalfa), Bermuda grass, Guinea grass, Johnson grass, oats, corn, and even clover and beets or mangels, can be grown, and yield largely. Cotton seed meal can be procured very cheaply, but it cannot be made the sole dependence for grain feeding.

The cheapness of land and the abundance of fodder and pasture, however, will not make poor $25 cows profitable at the first. No doubt fair dairy cows can be reared, by crossing Jersey bulls on these common cows, in a few years, but it would be more profitable to start with good cows at the beginning, and these would cost there not less than $60 to $75 each. Twenty-five cows of this kind would do better than 50 common ones, costing the same aggregate sum of money. Buildings could be put up for shelter for $10 per head of cows, and shelter against the hot sun is more needed than protection against the winter's cold, and yet this is necessary, for slight cold is as severely felt there as a greater cold is here. As regards help a milker for each 15 cows, or one for 10, would be required, and at least one good man for each 100 acres of land in hay and pasture, and one more for each 50 acres cultivated in crops. It will not be difficult for any person to figure up approximately what the cost and expenses will amount to. The dairy must be a fall and winter one.

In the mountain region, the opportunities are far better. All through the great valley of the Blue Ridge is a splendid dairy country, where butter or cheese could be made every day in the year. A cool summer climate, and a warm winter, afford the greatest facilities for making the very best quality of dairy products. Cool springs and clear trout streams flow down the mountain sides and through the valleys, while it is naturally an excellent grass country. I have seen remarkably fine red and white clover, orchard grass and timothy, high enough to mow on the first of May, as low down as Western Georgia. Every fodder crop of the North can be grown there, and some of the South. Roots of all kinds have a long season, but as winter feeding on hay and roots need only continue during portions of two or three months, for a few days at a time—pasturage being practicable except for the short intervals when the light snows cover the ground, and for every other day in the year, and no shade or shelter from the summer's sun being needed at any time—the grazing season is practically continuous during the whole year.

I am convinced that a cow can be fed the whole year through for $5, or less, on the very best milk-producing feed, and the whole year can be utilized in the butter-making, with no need for ice in the summer or fire in the dairy in the winter, while the whole southern country affords a market for the butter, pork and poultry. In addition, the male calves need not be vealed, for the woods afford abundant feeding for beef cattle, which can be reared up to three years old for certainly not more than $15 I know of fine tracts of land that can be procured for $3 or $4 an acre, upon which beef can be raised at this cost, and one steer to about ten acres, while the seeded land would support a cow to three acres. One other point only can be mentioned (for this is already trespassing on your space), and that is the absolute freedom from flies, which are a troublesome pest in the low country, and indeed in many places at the North. Without disparaging any other part of the South, I prefer this, but yet say that there are very great opportunities all over the southern country for the enterprise of farmers seeking new homes.

A Short and Practical Essay on Butter Making.

The Wisconsin Dairymen's Association last year offered prizes for the best essays on butter making, the best essays not to exceed 250 words. Competition was active, and many valuable little treatises was the result. The first prize was won by D. W. Curtis, of Fort Atkinson, and reads as follows—it being a model of conciseness:

COWS.

Select cows rich in butter making qualities.

FEED.

Pastures should be dry, free from slough holes, well seeded with different kinds of tame grasses, so that good feed is assured. If timothy or clover cut early and cure properly. Feed corn-stalks, pumpkins, ensilage, and plenty of vegetables in winter.

GRAIN.

Corn and oats, corn and bran-oil meal in small quantities.

WATER.

Let cows drink only such water as you would yourself.

CARE OF COWS.

Gentleness and cleanliness.

MILKING.

Brush the udder to free it from impurities. Milk in a clean barn, well ventilated, quickly, cheerfully, with clean hands and pail. Seldom change milkers.

CARE OF MILK.

Strain while warm; submerge in water forty-eight degrees. Open setting sixty degrees.

SKIMMING.

Skim at twelve hours; at twenty-four hours.

CARE OF CREAM.

Care must be exercised to ripen cream by frequent stirring, keeping at sixty degrees until slightly sour.

UTENSILS.

Better have one cow less than be without a thermometer. Churns without inside fixtures. Lever butter-worker. Keep sweet and clean.

CHURNING.

Stir the cream thoroughly; temper to sixty degrees; warm or cool with water. Churn immediately when properly soured, slowly at first, with regular motion, in forty to sixty minutes. When butter is formed in granules the size of wheat kernels draw off the buttermilk; wash with cold water and brine until no trace of butter milk is left.

WORKING AND SALTING.

Let the water drain out; weigh the butter; salt, one ounce to the pound; sift salt on the butter and work with lever-worker. Set away two to four hours; lightly re-work and pack.

Poultry Yard.

Varieties of Fowls.

An Irish paper thus describes several popular breeds:

The varieties of fowls that claim the notice of the poultry farmer or cottager are considerable. Their value is differently marked, according to the objects for which they are kept. Some breeds are reared for the table, while others are intended for laying and hatching alone. The amateur or cottager must make up his mind as to the exact object he wishes to carry out in keeping fowls, and afterwards it will not be difficult to choose the breeds. If he desires to rear fowls for table use some are not appropriate, as, for instance, the Malays, which are slow in fattening. Others are yellow-skinned, and are not regarded with favor by the poulterer. Such are Cochins and game fowls. The Dorking combines the excellence of having a white skin and being a large grower, and is, therefore, in high request for table purposes.

When the production of eggs is the grand requisite in poultry, the "everlasting layers" should be provided, and these are found in Spanish, Hamburg and Polish, the latter being less inclined to sit than any other breed. As general useful stocks, Cochins, Brahmas and Surrey fowls are found capital breeds. Dorkings are somewhat difficult to rear. They require to be brought up in a dry district, and to have a good range, while Cochins reconcile themselves to the most circumscribed limits.

The Dorking is one of the most excellent of the pure breeds. It is large, the flesh is excellent, and the eggs are of a good size and flavor. The color varies, dark having the preference. The average weight of the cock is 8 pounds. The hen is slow in sitting, therefore her eggs are commonly entrusted to foster-mothers. For this duty the game hen is best. The Dorking is chiefly valuable for table use.

The Spanish is a fine bird, wearing a variety of colors, but black is most in request. The cock is marked by a single comb of large dimensions, standing erect on its head. The breed is further known by a lobe of white flesh behind the ear. The hen lays a large egg of good flavor, tapering at both ends, and generally weighing from 2¼ oz. to 3¼ oz. She belongs to the class of everlasting layers. She continues laying, and manifests little inclination to hatch, and as hatching can be done by common hens, she is much prized for this disposition.

The Brahma is a larger bird than either the Dorking or the Spanish. The flesh is not delicate, but when young it is excellent. The pullets are full grown at six weeks. It does well in confined places, and is one of the most useful breeds we have. There are

two kinds of Brahmas in this country, the white and the dark; the latter is the most prized. The egg of the Brahma is small, weighing about 2 oz., and is of a buff color. The hens are great layers, and being hardy, they give eggs in winter. They form very useful crosses with other breeds. The chickens are generally reared with little loss. They require a wide range, but will thrive on smaller supplies of artificial food than some of the more delicate breeds.

The Cochin awakened a considerable amount of enthusiasm in this country when first introduced, and has been much wanted among poultry-breeders. There appearance is somewhat singular; they have a large size, and manifest a quiet disposition. The tails and wings are small, they have a remarkable development of feathers upon the thighs. The cock weighs about 10 pounds, the hen about 8 pounds. The Cochin lays medium-sized eggs at a period of the year when they are most valuable. The chickens are hardy, and their chief recommendation is the number of winter eggs laid by the pullets. They are profitable poultry stock, though they are not in so high request for the table as some other varieties. The white birds, though highly ornamental, are not so valuable as the colored varieties; yellow, buff and crimson are the colors most in request.

Hamburg fowls form two distinct varieties, viz: the pencilled and spangled. The Hamburg never wants to sit except in very rare instances. No other fowls will produce so many eggs upon so little food; they are much given to straying, and will fly over almost any enclosure, and eat flowers as well as fruit and vegetables, but there is no breed so well able to take care of themselves.

The Malay is one of the very largest breeds. The pullets commence laying early. The chickens when first hatched are very strong. They are rapid growers, but in this country their plumage does not grow as fast as their bodies, consequently they present a half-naked appearance, and during this period they are sensitive to cold and wet. The cock bird weighs 10 or 11 pounds, and sometimes stands three feet high. The flesh of the Malay fowl is somewhat coarse, with a browish tinge, and they are not very good for the poultry farmer.

The foregoing are some of the most strongly-marked varieties, but the crosses in the various breeds that have taken place are of course almost countless Of the French varieties, the Houdan has proved most successful in this country. It has been called the Dorking of France. The plumage is black, spangled with white, and the comb three-lobed. Chickens of four months weigh as much as 4½ pounds, and grown birds 8 pounds each. The Crevecœurs have black plumage and a peculiar two-horned comb. The flesh is greatly esteemed for its delicacy, and the birds grow rapidly.

Care of Young Turkeys.

One of the most serious objections to raising turkeys for market is the great loss occuring among them when very young. Indeed this is the greatest difficulty the farmer has to cover in their management, for once beyond the downy period, and feathering well over, the task becomes an easy one. No mother is equal to the turkey hen in caring for them, and it is no advantage to place turkey eggs under a common hen when it is desired to hatch them.

First of all the greatest care should be exercised that no dampness should reach them, as it is surely fatal. They should be kept closely confined under a coop that is water-tight until the sun has evaporated all the moisture from the grass, and at evening they should be put up again before the sun goes down. Next comes regularity in feeding. The usual custom is to feed them three times a day, and while that will answer to a certain extent for young chickens, it will not suffice for young turkeys. The difference is in the time of feathering. Young turkeys feather very rapidly, and during the process the system is taxed to its utmost to supply the demand occasioned by the rapid feathering. For that reason they should be fed very often. An omission of feed for a long time will occasion death, and the food should vary, and not be of one kind. Hard boiled eggs chopped fine, mixed with onions, (tops and bulbs), is excellent. Oatmeal, coarsely ground, screenings of wheat and cracked corn furnished a changeable diet, and if soft food is given it should be made by boiling potatoes and thickening them with fine bran. In giving soft food always salt to taste, as turkeys need salt as well as animals, but avoid an excess.

As soon as the dangerous period of feathering has passed they may be allowed to ramble at will. In tobacco fields they perform all the work of "worming it," picking off every green worm that can be found in a field of tobacco or tomatoes. They are great foragers, and grasshoppers and nearly all kinds of insects are cleared off a farm where they have liberty to forage. One gobbler is sufficient for a dozen hens, and they will protect their young vigorously if attacked. When about half grown the young males engage in battle, which does not end until one of them is master, and often a whole flock may be seen warring with each other. Turkeys are profitable, and on farms where they have plenty of range, will return a greater equivalent for the amount of capital invested in them than anything else. If they are hatched under a common hen they will often go into the coop at night and roost inside with other poultry, but, when hatched under a turkey hen, they invariably prefer to roost on the branches of trees or some high location. They can be taught to come at the call if they are fed with regularity. Always give them a feed when they come up at night. This teaches them to expect it, and at a certain period every evening they will come for their food and then go to roost.—*Ex.*

The Poor Man's Bird.

The duck is peculiarly the poor man's bird, its hardiness renders it so entirely independent of that care which fowls perpetually require; and, indeed, all those classes of humble life who have sloppy offal of some sort left from their meals and do not keep a pig to consume it, ducks are the best save-waste for them. Even the refuse of potatoes or any other vegetable will, with a little bran meal, satisfy a duck, which it thankfully accepts and, with a degree of good nature which it is pleasant to contemplate, swallows whatever is presented to it and very rarely occasions trouble. Though fowls must be provided with a roof and decent habitation, and supplied with corn, which is costly, the cottage garden waste and the snails and slugs which are generated there, with the kitchen scraps and offal, furnish the hardy ducks with the means of subsistence. And at night they require no better lodging than a nook in an open shed. If a habitation be expressly made for them it need not necessarily be made more than a few feet in height nor of better materials than wattles and clay mortar, a door being useless, unless to secure them from thieves. —*Doyle's Domestic Poultry.*

Roosts.—Take 2x4 scantling and nail legs to them of the length to suit space and breed. These can be moved at pleasure when cleaning droppings, or for any other reason that may present itself; but the best part of it is as regards lice. Every week take the kerosene can and go to the hen house, carefully pick up and carry out of doors the saw benches, pour the kerosene on them, and touch a match to it; the flame will quickly run over every part of it, and go out without burning the wood, but every mite, or nit that would have made one, you are rid of forever.—*Poultry Yard.*

Horticulture.

Kitchen Garden.—May.

There is necessarily a great deal of monotony in these remarks. The operations in the garden are nearly the same one year with another and constantly grow simpler.

This will be an unusually busy May, on account of the backwardness of the season. Potatoes should get a light harrowing just before coming up to disturb the weeds, and the same should be done between the rows of onions with the steel rake. At least two plantings of peas, string beans and corn should be made during the month. Early tomatoes should be set out, and more sown immediately for canning, or a late supply for daily use. By the middle of the month bush squash, cucumbers and okra may be sown. It is presumed that parsnips, carrots, salsify, parsley, early beet, celery and cabbage have been already sown; if not they must take precedence of all other things. Sow winter beet towards the last of the month; also set up bean poles and plant if the weather be favorable. Set out egg plants and watch for the potato bug which is very destructive to them. I believe it to be perfectly safe to use Paris Green when the plants are first transplanted; when they get strong the bugs will not injure them. There will soon be plenty of work hoeing and thinning the earlier crops. Lima beans may take the place of the kale or spinach which is now about used up, or has gone to seed. Rather than have ground lying idle make the garden smaller. Land does not need rest but change,—change of crop and change of manure. Save rye for mat making before the grain has matured enough to grow. Experiment a little with everything. In covering a piece of land with a particular kind of manure for example, it is always worth while to leave a smaller corner untouched, and to note the difference in the growth of the crop there and here. It is only by comparison that we can learn, and we must have something to compare with, not remote but close at hand.

Cabbage plants are often very hard to raise on account of the fly. I have always succeeded when I covered the bed first with a heavy dusting of soot, and then with branches enough to shade the ground well; but when I have tried the soot alone or the branches alone, I have sometimes failed. I cannot account for it, but know it to be so. A friend recommends a decoction of wild garlic as a preventive of the fly.

John Watson.

The Best White Grape.

So far as he has been enabled to judge, the veteran Charles M. Hovey, in the *Massachusetts Ploughman*, places the Pocklington at the head of all the white grapes yet introduced.

Pocklington, or the Golden Pocklington. This is a very remarkable grape. An accidental seedling, raised by Mr. Pocklington of Sandy Hill, Washington county, N. Y., and believed to be a seedling of the Concord. It was first introduced four or five years ago, and the young vines have hardly yet produced much fruit; but the coming season will give it a fair trial. The specimens that have been exhibited have come from Northern New York, and those have been so large and handsome that they fully sustained the high character claimed for it. Washington county is one of the coldest sections of northern New York, but the specimens exhibited last year were quite as ripe and sweet as some of our so called early grapes raised about Boston. There can be little if any doubt it will ripen at the same season as the Concord, and flourish everywhere as well as that remarkable variety. It is a strong grower, with large and thick foliage of the Concord, and has not, so far, been known to mildew in the most adverse seasons. It has stood without the least protection in Mr. Pocklington's garden, where the thermometer fell as low as 34 deg. below zero.

Its qualities may be summed up as follows: Vine, strong and vigorous grower, foliage large, thick and healthy; clusters large, slightly shouldered; often weighing a pound or more each; berries round, very large; color, greenish white, attaining a golden tint when fully matured, covered with a profuse bloom. Its productive qualities are said to be enormous, and the specimens from time to time exhibited have shown it to be a most remarkable bearer. It ripens at the same time as the Concord. I have before stated, it is as large and handsome as the Golden Hamburg; and as rich and sweet as a Thomery Chaselas, and I have seen no reason to change my opinion. I consider it the best white grape.

Prentiss.—This is a promising new variety, but I have seen less of it than the Pocklington; very fine specimens have been exhibited, and branches showing its great productiveness. The berries are of medium size, yellowish green, often with a rosy tint. Bunches good size, compact. Skin thin, with a tender, sweet acid, melting juice, and a pleasant aroma, quite free from any foxy flavor. The vine is a good grower, with medium sized healthy foliage, very productive, hardy, and ripens at the same time as the Concord.

Duchess.—Another very promising white grape, fine specimens of which were exhibited two or three years ago, at the meeting of the Pomological Society in Boston. Mr. Caywood the originator, a good judge of grapes, speaks highly of it, and I have no doubt it will prove a valuable kind. The bunches are of medium size, the berries medium size, and the quality excellent; it is very productive and hardy, and ripens just before the Concord.

The *Niagara*, the last of the better known white grapes has, from pe uliar reasons, only been tried in one locality. It has not been generally disseminated, and neither its hardiness or other characteristics are well known only in the place of its origin. It is a good looking grape, with shouldered bunches, and of good quality, though not so free from the native flavor as the Pocklington.

Manure for Fruit Trees.

We have often insisted that fruit trees should be grown as other crops are, and a New York contemporary has been urging the same thing. It very properly says that a fruit tree should be considered as a cultivated crop, and not as a forest tree. In the forest trees are manured yearly by the leaves which fall and by the decay of the former growth, but orchards are too often cultivated and cropped in some way or another, and the soil taxed, to the injury of the trees, not to take account of the fruit which is gathered from them. This is quite sufficient to account for the failure of the trees to produce satisfactory crops of fruit, to account for off years, and the various diseases that are complained of. Starvation is the parent of diseases. If it is general it causes death very soon; if it is partial it produces various forms of disease, and some of these are accompanied by parasites, both vegetable and animal, which help in the work of destruction. The analogy between animal and plant life is always to be considered. Weak, half starved animals are subject to scab, ringworm, mange, and other parasitic skin diseases, while crawling vermin, inside and outside, infest them and live upon their disordered secretions. Internal parasites, worms of various kinds especially, abound in ill conditioned animals and are encouraged by the diseases which produce this condition. There is no doubt that many diseases

in fruit trees, the yellows in peaches, blight in pears, bitter rot in apples, black bud in cherries and plums, and perhaps bark lice, leaf lice, mildews, and rusts, and it may be borers and other destructive insects are encouraged by diseases produced by starvation, through which the suitable conditions are caused for the vigorous growth of all these parasites. We will not say it is so to the full extent to which these parasites are found, but we do not doubt that many of them are the natural results of want of healthy vigor in the trees, and all may be.

How rarely is a tree manured and fed. Neglect in every way is the general fate of an orchard. And this is simply starvation. There are a few instances, in which the trees are liberally manured, and in all these cases there is a marked benefit to them, as exemption from disease, large products, fine fruit, constant bearing, and every indication of long and vigorous life. The evidence both ways is too clear for a remnant of doubt to exist. Trees must be fed, and when they are well fed they will make a successful and healthful growth. Manure may not always be a sufficient food. It is deficient in the mineral elements of the requisite food. Potash and lime are most needed. Some phosphoric acid and nitrogen are required, but lime and potash more than these. So that, in addition to manure, we would use lime and wood ashes or potash salts and phosphoric acid. The chemists have compounded a special tree fertilizer based upon the chemical constituents of the tree. This is the true way to reach the desired results, for the tree certainly needs in its food every element that is contained in its substance and its fruit. But, whatever is done, it should be done liberally, and just now is a good time to do it, as the tree is now storing away fresh substance in preparation for next year's growth. And we would not forget to give another square feed again in the spring, until the past neglect has been recompensed.

To Control the Bearing Year.

It is now over fifty years since observing orchardists have noticed that American apple trees bear their heaviest crops in the even years, as in 1880, 1882, and their lightest crops in the odd years, as 1879, '81, '83, and so on. Last year the crop was light, and consequently we may look for an abundant crop again the coming season. It would be very desirable to be able to so control the bearing of our trees that we might have a fair crop each year. It would be better both for the producer and the consumer, for now we all have a surfeit one year, with prices that are unremunerative, while the next year we all have to go without apples, or else pay extravagant prices for them.

Every bearing year we see recommendations for picking off portions of the blossoms in order to change the bearing year, just as if the change were one that may be easily made. Some are recommending to pick the blossoms from a single tree in order to try the experiment, and see if the thing can be done. Experiments enough have already been tried to settle this question as to the possibility of changing the bearing year of our trees, provided we will go to work in the right way, and will persevere to the end. But it will be only time and labor thrown away to attempt a change upon a single tree or upon only a few trees in a large orchard, unless the orchard is at considerable distance from other orchards, and also unless great pains are taken to destroy all insect life in the fruit that falls from the trees prematurely.

Several causes have had an influence in bringing about this habit of our trees to bear most of their fruit the same year. A severe and widespread frost that should destroy the blossoms, would cut off the crop for one year, and leave the trees in just the condition for bearing a full crop on the following year. In a year of abundance, there are a great many insects propagated, and allowed to grow to maturity. These, like the apple curculio and codling moth, are not much noticed in years of abundant fruit, because there are a great many sound apples to go into the cellars in the fall, but in years of scarcity, the numerous insects grown the year before, may have so little feeding ground as to be much crowded. We have counted as many as twenty-five curculio punctures in a single half-grown apple that fell from a tree that had its blossoms all picked off the previous year, for the purpose of changing the bearing habit of the tree.

Where a farmer has a young orchard that is about coming into bearing, it would not be a very difficult thing to do to make the orchard an even or an odd bearing orchard. It is a small matter to pick the blossoms from young trees, compared to doing it upon an orchard of mature ones. Insects are the greatest enemies to the orchardist at the present time, and no one can expect to succeed in growing fruit unless he will learn how to control the insects, and will then act up to his knowledge. When we conclude to clean up and destroy all the immature fruit that falls, from the time the curculio begins his work until the codling moth ends her's, then, and not until then, may we count upon good crops of apples every year. Without this the picking off of blossoms from few, or from many trees, will be labor that will bring very little return.—*N. E. Farmer.*

Farm Gardening.

At a recent meeting of the Central New York Farmers' Club, the subject for discussion was "Farm Gardening." We condense some remarks of the members. It is a mistake to stake out a piece of ground exactly square for gardening, in some corner near house and barn, and to put almost a tight board fence about the same. Such a square plot can neither be plowed nor cultivated to advantage, and has to be worked with spade and shovel. Short beds or short rows prevent the use of the plow or the cultivator.

David Gray gave his method of farm gardening: "I would hunt up a spot of sandy loam if possible; locate it full fifty rods from either house or barn. I would stake out one-fourth of an acre plot, have the same full four times as long as it is wide; then it can be cultivated with both plow and cultivator, having a plenty of room one way of the garden. I would enclose the same with a wire fence that will let the sun in on all sides of the garden; I then would plant all my crops in single rows the long way of the garden. In planting young corn, peas, potatoes the long way, you can both plow and cultivate; cabbage the same, and vines the same. A farmner's family would ot require more than one row of cucumbers, or squash, or melons, one long row of beets and onions, carrots, parsnips or any other small crop. Then comes the berries. They should be located on the west side of the garden if it is convenient to lay out the garden the long way south and north. I would give a row of melons about six feet each way." In the South he saw fifty acres of asparagus planted in rows six feet apart, and the hills two feet apart from each other, and the plants are especially fine and give a large yield. They also get a crop of peas between the rows. The great advantage is that the ground can be plowed between the rows of asparagus.

Mr. Lyon would place his garden near the house and make it long in shape. It should be plowed in fall and cultivated into ridges in spring. Everything should be planted on the ridges. In that way his seed is raised up out of the wet. Weeds can be more easily destroyed. A manure heap makes a good hot bed where the seed can be started for transplanting. Put earth into a small box, plant the seeds in that and plunge the box into the manure heap.

Mr. Cleveland said there is no greater discouragement against a farmer's having a good garden than the usual manner of planting seed. He fully agrees with Mr. Lyon's ideas. Every man who plants in beds will find that hard to take care of and cultivate. Everything should be planted in straight rows. Then it takes but little time to care for them.

Mr. Jenks would make a vegetable garden and include strawberries, red and black raspberries and blackberries, and would apply the same principle to the cultivation of fruit. Plant in long rows so that they can be cultivated with a horse. He would, of course, add currants and flowers by all means. Let roses be massed in beds by themselves.

One member has on the west side of his garden apple trees as thick as they can stand, thus defending his garden from the cold winds. As to cutting back raspberry bushes, one speaker advised cutting before the buds start and as soon as it can be learned what has been winter killed. Another advised cutting back in summer. A third recommends cutting early and long for baby raspberries. For destroying moss on lawns and in dooryards the old remedy, caustic lime, was suggested. Rake the moss off first and rake the lime in. Mr. Lyon recommended covering the moss with sand mingled with phosphate.

Are the Flowers of the Wildgoose Plum Pistillate?

A correspondent of the *Western Rural*, after twelve years' experience in growing this plum, "on every variety of soil and elevation," declares the flowers to be "pistillate, or females." And in support of this declaration cites a case where 300 trees of wildgoose, planted on the east side of a lot of "Miner" and other plums, matured fine crops of fruit until the removal of the other plum trees, ever since which the wildgoose plum orchard has been barren of fruit. That the flowers are purely pistillate I have strong doubt, but that other varieties blooming at same time, and planted near to the wildgoose, do have some influence on the prolificacy of the trees, seems to be unmistakably indicated by my own experience with this plum; still there are so many conflicting circumstances in connection with that fact, as to render the pistillate idea somewhat doubtful. First, the Miner, *with me*, is always two or three days behind the wildgoose, in time of blooming. Secondly, I know of a small orchard of 100 trees of wildgoose, not more than five miles from me, that has no other plum trees of any kind near it, but which as a rule produces good crops of fair fruit. Then further, on my own grounds I have wildgoose trees, that stand side by side with Miner trees, that some seasons have no fruit, while others, not *near* to other plums, produce heavy crops of fine fruit. As a rule, my observation and experience with the wildgoose plum is in opposition to high manuring. Land that would grow twenty-five bushels of corn to the acre, if of a decided sandy character, is where I would prefer to set an orchard of this plum, but to be certain of best results, I would surely plant some other varieties alongside of, or near to it, *not* Miner, however, as it is nearly as worthless here as Bassett's American. J. W. KERR.

Denton, Md., April 25, 1884.

Mr. Editor:—Say to friend Kerr that we are entirely too busy mowing grass on the lawns with that "Pony" mower to discuss grass in orchards now, but may do so ere long. If Mr. K has no "Pony," he might use the popular Carolina team—a single ox.

W. F. M.

A correspondent of the *Gardener's Monthly* ties newspapers around celery, and bleaches it better, easier and cheaper than by earthing up.

One Way of Raising Potatoes.

Royal Smith, a well-known contributor to the eastern agricultural papers, gives the *New England Farmer* the following plan for raising potatoes: "In consequence of the severe drought of the previous year, I decided last year in preparing my patch for potatoes, though not differing materially from former years, to plough the ground *deeper* than usual, selected for this purpose a piece of rye stubble, sandy loam land, in fairly good condition, that had been worked to the depth of about eight inches of active soil, and resting on a dry subsoil of coarse sand or gravel.

This I made rich by spreading on the surface a dressing of ripe barn compost; also a dressing of South Carolina Rock, ground fine, and cut with acid, muriate German salts and potash. These I mingled with the surface soil with a harrow, and ploughed them under to the depth of 10 inches just previous to planting time; furrows three feet apart of ample depth were opened for rows, and the hills were put in eighteen inches apart the other way; one potato about the size of a small hen's egg was put in each hill for seed, at the time of planting, together with a light sprinkling of plaster and wood ashes. They were covered four inches deep; the surface kept level and clear of weeds till the last time hoeing, when it was made somewhat crowning round the hills. The variety on one part of the patch was Early Rose, on the other part Beauty of Hebron. They were dug and put in the cellar the last of August, and I measured thirty bushels on twenty square rods of land, sound and of excellent quality.

In consequence of the severe drought the previous year, the seed I used was very green and immature; I had no other. The good success I realized with it last year goes further to corroborate other successes I have realized in former years in the same direction. Though the larger, more mature tubers are much the best for table use and stock feeding, perhaps also for manufacturing into starch, nevertheless I think the smaller, more immature ones are much the best for seed; they seem to possess the most vitality; produce the most vigorous and prolific plants, all other things being equal; though when potatoes are plenty and cheap I would not advise the use of the very smallest ones for seed, as the fore part of the season might be very dry and cold; in consequence a very small tuber might not possess sufficient vitality and sustenance to produce and sustain the plant till it could throw out roots to obtain nourishment from the surrounding soil; the same objection would pertain also in the use of single eyes for seed. In favorable seasons this discrepancy might not be so obvious between very small seed and that somewhat larger.

So also the soil, in a cool, wet season, plowed to a depth of seven inches, would be sufficient to produce the best results in the growth of a crop of potatoes; but in seasons of drought, like the two past seasons, it would prove a failure on such land as is described in this letter.

After an experience of over fifty years in growing potatoes in a small way, for table use, and some to feed out to my stock; also since the disappearance of the potato disease that prevailed so extensively some thirty years ago, and the advent of the Colorado beetle, in order to insure success, I make the the ground on which I intend to grow potatoes very mellow and rich with different kinds of plant food congenial to the potato plant. I intend in future to plow pretty deep; a foot in depth is none too deep of active soil for a good seed bed; in planting, to put the seed in the hills down a good depth into the active soil, so that the potatoes will have a cool, congenial bed to perfect their growth, even though the season may be very dry, and the extreme heat of the sun very damaging to the growth of vegetation. I shall hope, by God's blessing, rarely to fail of good success."

Experiments with Celery and Tomatoes at the New York Agricultural Experiment Station.

One of the most popular, perhaps, with the exception of lettuce the most popular, of salad plants is celery. It is not many years ago when celery-growing was one of the mysteries of gardening, so far as current opinion went, and the carefully grown plantings were transferred to deep trenches at the bottom of which much manure had been spaded, while a laborious process of earthing up was successively pursued. Market gardeners, however, who are usually the first to introduce new processes of growing, on account of the competition they have to meet, found that the celery grown upon the surface, and earthed up once for all at the latter part of the season, furnished profitable results, and this latter method seems now mainly the one pursued for commercial purposes. In the private garden, however, the trenching is in many cases continued, and it, therefore, seemed to us desirable to know the comparative merits of these two methods, for if surface planting is equal in its product to the trench planting, it is far to be preferred, on account of the less labor involved.

Our list of varieties included twenty named samples: 100 seeds of each were planted in boxes, April 11th and 12th, and placed in a cold frame, where they were covered during severe weather. On July 5th, thirty of these plants were set in a trench, one foot deep, well manured at the bottom with thoroughly rotted horse manure, and thirty plants were planted adjacent upon the level without special manuring.

The first data noted was that the varieties of celery required from twenty-six to twenty-eight days to vegetate their seeds, and 100 seed produced upon the average fifty-seven plants, the variation between varieties being 16 per cent. of vegetation for Seymour's Solid Red, and 81 per cent. for Giant White Solid. Averaging our results obtained in seventeen samples in which the varieties from the two rows are separately noted, we find that, omitting fractions, plants grown under level culture averaged 177 pounds per hundred plants, while those under trench culture averaged 178 pounds per hundred plants. The length of the bleached stems was rather greater and the suckers were rather more numerous upon the plants grown in the trenches, but on the other hand, the bases of the stems were more often split and deformed than occurred in the plants grown upon the level. It appears, therefore, from this trial that the trench culture yielded no advantage for the increased labor involved.

Our test with tomatoes include 64 named samples. One hundred seeds of each kind were planted in boxes in the greenhouse April 9-11, and the time required for vegetation was six to nine days. The number of seeds which vegetated varied from 14 to 100 per cent. as between the different varieties, the average being 74 per cent. Four plants of each kind was transferred to the garden on May 24th. The first bloom was noted 61 days from planting upon the Little Gem variety, and the last variety to bloom was the Improved Large Yellow, in 104 days from planting. The first tomato to ripen was of the Green Gage variety, and was noted July 31, or 112 days from planting. The first large-fruited variety that ripened ten fruits was the Alpha, 135 days from planting, or upon August 22. The New Currant, a very small variety, had ripened 10 fruits on August 18, and the Turk's Cap, another small variety, August 22. The President Garfield, a so-called new variety, failed to ripen any fruit. We find that the order of ripening of the varieties does not agree with that noted last season. Thus, last year the Acme was two days later than the Mayflower; the past season it was 7 days earlier. Last year the Acme was 6 days earlier than the Paragon; the past season it was 30 days earlier. Last year the Acme and Trophy ripened the same day; the past season the Acme was 7 days earlier than one sample of the Trophy, and 11 days earlier than another.

It is interesting to note that tomatoes which came up in the garden as weeds from the last fall's seeding, seemed to ripen their fruit at about the same time with the earlier class as grown by us from the planting of April 9th-11th.

We note that as a rule smooth tomatoes have few cells, and, conversely, that many celled tomatoes are rough. The number of cells found varies in the fruits on the same plant, as does also the smoothness of the fruit. These facts suggest that in order to secure smooth fruit we should select for seed those which are few celled. As evidence in favor of this suggestion, we note that fruits of the Acme tomato are invariably smooth, and the number of cells in this variety rarely exceeds four. The Cherry, the Currant and Apple tomatoes are also invariably smooth, and rarely have more than two cells.

The roots of a tomato plant examined occupied the upper eight inches of the soil, and were traced to a distance of 24 inches on one side, and 30 inches on the other. From this it appears that the plant drew its nourishment from a circle about 4½ feet in diameter, or from an area of about 16 square feet. A single root was traced downward to a depth of 2½ feet. The tap root was clothed with a multitude of fibrous roots to a depth of 8 inches, where it separated into massy branches. This rooting habit is what we would *a priori* expect from a plant originating in the tropics. It seems at present to be a safe generalization that all plants grown in our gardens of tropical origin, are superficial rooters, and that consequently they not only require a hot season for their best development, but that the manuring shall be placed within the area of soil occupied by the roots. *A priori* deep manuring or shallow manuring or surface manuring, as a practice, should depend upon the rooting character of the plants which are to be grown upon the soil which receives the manure.

E. LEWIS STURTEVANT, *Director.*

A Test of Tomatoes.

During the past season I made a trial of fifty-five varieties of tomatoes, six plants of each, for the purpose of testing their respective characters on the same land, and under the same system of culture. The plantation was on a gentle slope facing south, thus obtaining a warm aspect, with a light, gravelly soil that absorbs the rains as they fall. The ground which had previously been in clover, was plowed deeply, and well coated with rich short manure The plants made a good growth, but not over luxuriant, to the detriment of the crop of fruit. The seeds were sown in rows in a hot bed the last week in March, and when about three inches high were pricked out into a cold frame, and remained until all danger of frost was past. They were then carefully lifted and set out in their final positions in the open air. Altogether the experiment proved an entire success, and was full of interest as well as practical value to the writer.

Many of the varieties, however, were identical in every particular, and the greatest portion not worthy of a place in any garden. Livingstone's Perfection and Favorite were especially deserving of praise. The fruit was large and solid, very even croppers, and no cracking noticed. Of the two, the latter was rather larger, and consequently more showy. The Trophy held its own nobly, and is difficult to surpass when grown properly. Among early varieties, I was pleased with the new Mayflower. It is a decided improvement on the Early Acme, a tomato that rotted badly in this collection. The Beauty, sent out by Mr. Buist, of Philadelphia, the past season, is one of the very finest on account of large size, solidity, and a brilliant scarlet color.

The Tilden, one of the very first of our improved tomatoes, rotted badly; its duty is evidently past. For earliness Hathaway's Excelsior was a success, but it is too small; and Early Canada Victor, another of the same class, is too uneven in outline. Extra Early Richmond, as its name implies, led the season, but it is of little value after the other kinds are ripe.

Among the fairly good varieties, but not better than those heretofore mentioned, I would place the New York Market, Queen, Island Beauty, and Paragon. The newer Vick's Criterion and Essex Hybrid are pinkish in color, and on that account will never prove popular. I have a preference for yellow tomatoes, notwithstanding the general verdict against them; and in the entire list Yellow Trophy proved the best with me. In fact it cannot be excelled for evenness of outline, solidity, fine flavor, and productiveness. When fully ripe it has a rich golden tint. The new English Green Gage is rather small, but an enormous cropper, pale yellow, very solid, round as a general Hand Plum and altogether desirable. The White Apple is too poor in color, and inclines to decay. For preserving purposes our list is certainly ample, and all the varieties tested did exceedingly well, from the miniature little Currant up to larger sizes. Red and Yellow Plum or Pear are particularly desirable.—*Cor. N. Y. Tribune.*

A Bed of Roses.

Roses, to give entire satisfaction, must have a deep range of good fresh soil for their roots. Isolated plants scattered here and there over the garden, or on the lawn, cannot well receive the soil preparation necessary for success. A properly prepared bed containing a couple of dozen plants will yield more and better flowers than double the same number will if set out among other things in the flower garden. A circular bed six to eight feet in diameter will be large enough to contain a good selection. A strong loamy soil is best; if it is somwhat of a clayey character it will be all the better. If the subsoil is hard, means must be taken to loosen it, and in general this can best be accomplished by throwing out to one side all of the good top soil and then properly turning over the subsoil with spade and pick. If the good surface soil does not reach to twelve inches in depth, enough of the subsoil should be removed altogether to allow this depth of good soil to be added; after filling the bed level, spread evenly over the entire surface not less than four inches in thickness of rotted manure, and then dig over the ground, which is then ready for the plants.

In selecting the plants it is not best to set a mixture of classes. Tea roses should not be mixed up with the stronger and hardier hybrid remontants, or perpetuals, as they are more frequently called. Where tea roses require winter protection they can be better treated by themselves than when mixed up with hardy kinds, which do not need protection; they can be planted closer, also, than is necessary for the varieties of more robust growth. The best mode of protecting tender roses is to lay them flat on the surface, secure them in place with hooked pegs, and cover them carefully with fine manure—or, if that is not available, with sand. The object is to cover the stems so that they will not be exposed to evaporation; it is not essential that they be covered so as to be below the reach of frost, but they should not be subject to the direct influence of frosty winds.—*Nat'l Tribune.*

The Homes of Our Cultivated Plants.

An address delivered before the Maryland Horticultural Society, March 27th, 1884, by Wm. D. Brackenridge.

(*Concluded from page* 119.)

Central America has given us many interesting plants in the way of Fuchsias, Achimenes, Amaryllis, with numerous very beautiful epiphytical Orchids, particularly of the Cattleya and Odontoglossum tribe.

To Mexico, our neighbor republic, we are indebted for much in the plant way; from it we received our first Dahlias, also the brilliant Poinsettia and the graceful Russelia, the Coral Tree, Tiger-flower, with many fine Lantanas which now adorn our gardens. From there we received such useful creepers as Manrandias, Lophospermums and Rhodohitons.

We will now cross the line from Mexico to "the land of the free and the home of the brave," and estimate what that has produced for the benefit of horticulture at home. Every one conversant with the botany of the United States, must be convinced that no more fair or lovely annual flowers than are to be found in our west and northwest States can be witnessed any where else, consisting mostly of Phlox Drummondi, Eutoca, five kinds, Nemophilas, Clarkias, Godetias, Bartonias, Collinsias, Clintonias, Anterrhinums, Calliopsis, Loasa, the hairs of which sting, and we add Coreopsis and Lupins, all of which are easily cultivated, and if sown early in spring under glass in a cold frame, and afterwards thinned out, will be in condition to transplant into flower beds in early summer, assisting greatly in relieving those monotonous clumps of Coleus, so much in vogue at the present day; for such a purpose, the best are Phlox Drummondi, Clarkias, Godetias, Calliopsis and Collinsias.

Have we as horticulturists paid that attention to our perennial herbaceous plants, which they so richly merit? I trow not. Where do you find in our gardens any of our native Columbines? what notice, if any, has been bestowed upon our cardinal flower, Lobelia Cardinales—or its twin sister Lobelia Syphiletica? Almost none. The gaudy Liatris is left to waste its fair form on our commons, and to enjoy the sight of a lady's slipper—Cypripedium—you have to penetrate some thicket to find one.

My horticultural friends, this ought not to be so. Foreigners appreciate these things far more than we do, and of them they form what they denominate an "American Garden," composed of such plants as I have mentioned, supplemented by our Rhododendrons, Laurels, Honeysuckles, Azaleas, Andromedas, and that sweet-scented, humble plant, the trailing Arbutus, or May flower, &c., &c., which have no match in any other country, save perhaps in the handsome flowering shrubs, introduced of late years from Japan and the north of China, in the form of Spiræas, Viburnums, Hydrangeas, Wigelias, Deutzias and Forsythias, &c. It may appear strange to you, but it is no less true, that the vegetation of Japan and northern China bears a strong identity in genera as well as in a few species, with those found in the United States.

Any one who takes a glance in the autumn season of the year, at our waste lands, meadows and road-sides, must be delighted with the numerous Golden-rods, Asters and small Sun-flowers to be seen, the prevailing colors being two, viz: Yellow and Blue, or modifications of these, as examplified in the zanthic or cynic series of color. In Brazil we found these two colors to prevail there also.

We have always considered it more pleasant to dwell in a country where trees shed their leaves, there being a greater variety of conditions in the vegetable world to contemplate, to wit: the swelling and opening of the buds in spring, the progress of the summer growth in developing flowers and fruit, and

then to witness the varied tints of color which the leaves take on in the autumn before their final decay; while within the tropics, vegetation presents a sameness all the year round.

We have noticed a considerable number of plants from various parts of the world, many of which as we said before, have found their way into this country, and the question we now ask is this, what gratification have they afforded, and what encouragement have we given for their farther dissemination among the numerous individuals who compose our population, and farther, what zeal are we about to manifest in adding to the number of such as are already on hand? These are questions for the votaries of horticulture in our midst to decide, and let me here ask you another question, viz: What progress has horticulture made in Baltimore and its immediate vicinity since the formation of our Horticultural Society, and we answer by saying, much. Just look at the conservative influence it has diffused into the community at large. Where are the iron railings that used to enclose our public squares or reserves? They are things of the past; now the populace can stroll to and fro, without let or hindrance, enjoying the shade of the trees, admiring the groups and inhaling the balmy fragrance of the flowers; so you perceive that a slow but steady refining process has been going on for some time, and with your countenance and aid it will continue, until all barriers to our public parks are swept away, and that portion of the public domain used as a sheep walk and deer park be held exclusively for the recreation of the people.

At the beginning of this address, it was stated that we would not go into the details of plant culture, and gave our reasons for it; but, we may be permitted before closing to offer a few passing remarks on some of the physical characteristics of plants in general, together with the moral and refining influence the study of plants exercises on the rising generation, and the first point we make is, that unlike the animal kingdom, who are nourished by food taken inwardly, and are possessed of locomotive powers, vegetables are nourished from without and are stationary, and in a sense may be said to grow out of their own decay, or the decayed particles of other matter, together with light, heat and moisture as essential accessories.

Dame Nature's laws being of a fixed character, has destined certain things for certain localities. We do not find Cacti or Aloes growing in meadows, neither do we find Butter-cups or Spatter Docks growing on hill sides, so it appears that every plant is placed in a locality where it will reproduce itself from the multiplication of the root-stock or seeds, these last, in many instances, are ejected to a considerable distance by the valves of the capsule coiling up elastically, as in the Touch-Me-Not. Others are borne along by the wind like a parachute, as in the Thistle and Dandelion, and some are carried a considerable distance by birds and cattle.

There is another law of nature worthy of our consideration, and it is that certain plants are so constituted as only to resist a certain amount of cold, and no ingenuity of man can make them withstand more; if any one says he can, then why is it that the Tomato, Dahlia, Heliotrope, etc., has not been got to resist unscathed, at least two degrees of frost? And just here, we would remind any one who may have plants touched by frost, to place them in the shade where a temperature a little above the freezing point exists, sprinkling them overhead with water.

What can be done to make our homes pleasant and attractive? We say furnish your yards and gardens with flowering plants. We have never been able to discover that much satisfaction is realized by the growing of plants in parlor windows, gas and other influences being too common to afford a gratifying result, although a Wardian case, filled with filmy Ferns and Lycopodiums, and placed on the window sill, will, if well managed, give great satisfaction. But no one in the city, who has a yard to his dwelling, need languish for want of flowers of his own raising, as a small green house, say 30 feet long by 14 wide, could be put up at a trifling cost against the dwelling, or division fence, and in many instances could be heated by a hot-water pipe leading from the cooking range in the kitchen; or another plan would be, that where the ground is dry to dig a pit 5 to 6 feet deep, walling it on all sides so that the wall would rise in front, 1½ feet above the surface of the surrounding ground, the back wall 8 feet, the glass to be covered in severe cold weather with straw mats or an old carpet. In such a house, plants, as Camellias, Geraniums, Azaleas, Fuchsias, Violets, Carnations, Wallflowers, Ten-Week Stocks and Calla Lilies, might be grown to advantage.

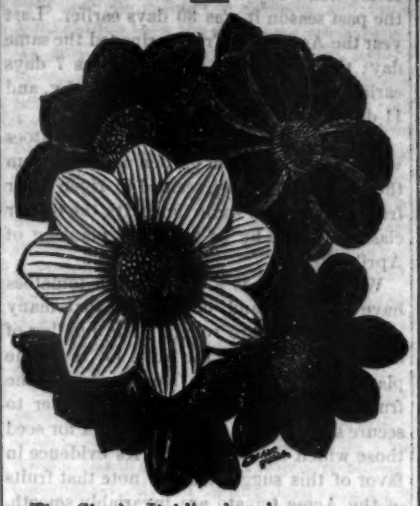
Dwellers in the country and suburbs of the city can offer no reasonable excuse for neglecting to have their houses surrounded by trees, flowers and shrubs. Let any one present a picture in his or her mind's eye of a dwelling built on a plat of bare land, where nothing exists of ornamental vegetation, but where weeds and briars rankle in luxuriance, what incentive would there be for any one to call this a home? Its inmates, particularly the children, would live in perpetual discord with their surroundings, hating their desolate abode, and would take advantage of the first favorable opportunity to make their escape therefrom.

Now just let us see what horticulture can do for such a place. It can transform the weed grown surface into a grass lawn, that may be kept as smooth as velvet; it can plant shade and evergreen trees, with flowering shrubs where briars grew before; it can plant vines to droop gracefully from the portices, covering with them bare walls and unsightly objects. Provision should also be made for flower beds, in proportion to the size of the place, so that harmony may prevail in all that belongs to the decorative. For all such embellishments will enhance the value of a property four times above the cost of making them. And then consider the hallowing and abiding influence exercised over the minds of dwellers environed by such surroundings, especially on that of the rising generation, for it is natural for children to love flowers, as in times of happiness and health they give pleasure to all, in times of sorrow their loveliness lessens the gloom They deck children for the festival, and maidens for the bridal. We lay them on the pale hands, folded for their long rest, and we strew them on the graves where our beloved ones sleep—so much for the benign influence of flowers.

The want of observation, and the habitual indifference to any thing that is beautiful or ugly, is difficult to cure in an individual whether young or old. Such people are like the poet's hero, "who trudged along, not knowing what he sought, and whistled as he went for want of thought." No one present, will for the future we hope, pursue such a heedless path, but will in the future put their shoulder to the wheel and assist valiantly in rolling along the benign and reformatory influence of our society upon a community who stand so much in need of being enlightened.

Do you not know my friends that horticulture is the most ancient of all professions. Our first parents were placed in the Garden of Eden "to dress and to keep it," but having disobeyed one command, the question is, did they fulfill the others? Now we of the nineteenth century, with all the experience of our forefathers, what have we done? I trow not much. I would therefore, as a friend to a cause so laudable and refining in its tendency, ask you to endeavor to infuse whatever influence you possess into all with whom you come in contact, keeping always in mind that the good which men do lives after them.

Single Dahlias.



The Single Dahlia has become a very popular flower within the past few years, and finds a place now in every garden. They are of every color and much less stiff and formal in their style than the double sorts. The tubers may be planted as soon as the ground becomes warm, and in the late summer and autumn they will produce a brilliant display of flowers.

The Maryland Horticultural Society's April show, held on the 24th ultimo, was one of the most beautiful it has ever held. It was made especially notable by the fine display of orchids—the largest collection ever exhibited in this vicinity, Messrs. Perot, Snow, Garrett, A. Brackenridge, Halliday contributing. In all the other departments also the show was exceptionally fine. The following awards were made:

Twelve stove or greenhouse plants, T. H. Garrett. Six ornamental foliage plants, first, John Cook; second, T. H. Garrett. Azalea Indica, six varieties, first, T. H. Garrett; second, Wm. H. Perot. Azalea Indica, single specimens, T. H. Garrett. Rhododendrons, T. H. Garrett. Geraniums Zonale, twelve varieties, James Pentland. Calceolarias, first, Wm. H. Perot; second, T. H. Garrett. Ferns, first, W. W. Spence; second, John Cook. Pansies, first, Wm. Fraser; second, Robert Patterson. Verbenas, Robt. Patterson. Model of ribbon or carpet-gardening, Wm. Fraser. Cinerarias, Wm. H. Perot. Orchids, collection in bloom, first, Wm. H. Perot; second, T. H. Garrett. Orchids, single specimens, first, Wm. H. Perot; second, T. H. Garrett. Cut flower collection, Robert Patterson. Roses, twelve buds or bloom, first, John Cook; second, Robert Patterson. Table designs, first, Miss Lizzie Patterson; second, S. Feast & Son; new designs, S. Feast & Son. Basket cut flowers, first, John Cook; second. R. J. Halliday. Hand bouquet, Miss Lizzie Patterson. Bridal bouquet, first, John Cook; second, Miss Lizzie Patterson. Corsage bouquet, Miss Lizzie Patterson. Pansies, cut blooms, first, James Pentland; second, Robert Patterson. Six heads of lettuce, W. W. Spence. Cactus, Mrs. Hamilton. Collection plants, Miss Shaw. To Capt. Charles H. Snow, for his fine collection of orchids, not entered for competition, special commendation.

Renovating Old Orchards.

If convenient please explain in your paper how best to renovate an old orchard. *When* should the old *bark* be scraped off, if at all? *When* manured, and what is *best* to put in a circular trench? And oblige

A VIRGINIA SUBSCRIBER.

In reply we would say, that the old bark can be removed as well now as any time. A short handled dull hoe is about as good as any implement we have tried. The scraping should be done in such a manner as not to bruise or injure the *live* bark, then let the scraping be followed by a washing of the trunks (and as high up the heavier limbs as can be reached) with "whitewash," about 25 per cent. of which is made up of *good* wood ashes.

The manuring would have been more effective on the present season's growth if applied earlier in the season, but far better now than not at all. I would not recommend the "circular trench" plan for "run-down trees," but a liberal broadcasting of stable manure, as first choice, and should that not be practicable, kainit would be my second choice, not less than 800 lbs. to the acre, broadcast, after the orchard has been carefully plowed, (not more than three inches deep), and then drag after sowing kainit. The trees should be judiciously pruned during mild weather in winter, removing all the weak and enfeebled limbs that give the inside of the heads a scraggy or brushy appearance. If the land on which the orchard is located has not been limed within five years, a dressing of lime, say 40 or 50 bushels to the acre, will prove beneficial to tree and fruit. Keep the land clean of weeds and grass after applying kainit by running cultivator or drag over occasionally, and if the pruning, as indicated above, was not done last winter, better, under the circumstances, defer it until next.

April 23, 1884. J. W. KERR.

Clematis.

These are among the most beautiful of climbing plants, and are suited for training over lattice work, up porch columns, or they may be used as bedding plants. They embrace a great variety of colors and are perfectly hardy.

Cannas.

Cannas are the most useful of all sub-tropical plants for general effect, whether as backgrounds in the border or for large clumps, or masses on the lawn. A large bed filled with the different varieties, with an outer border of Coleus verschafeldti, on the lawn, is one of the most beautiful features in ornamental gardening. A still better effect is produced by planting a row of Salvia splendens between the Cannas and Coleus. The ease with which Cannas are managed, their rapid increase, and their cheapness, combined with their great beauty, are all inducements in favor of their general cultivation. They may be grown from seed sown in the house; the seed should be soaked in hot water twenty-four hours before sowing, then sow in boxes; they will soon make plants three to four inches high, when they should be potted singly and grown on in all the heat the house affords, until the first of June, when they can be turned out into the beds prepared for them. But a better way is to purchase dry roots of any desired varieties, and start them in April in boxes in the house; these will make fine plants by the first of June. These will be sure to flower, and will give absolutely no trouble at all. The requirements of the Canna for its full development, are a deep, rich soil, a sunny position, and plenty of water in dry weather. When the season is over, and their tops have been killed by frost, they may be lifted, and stored the same as Dahlia roots; put them in boxes in a warm cellar or room, as they will not keep in any other, and cover them with dry sand.—*Floral Cabinet.*

The American Farmer

"O FORTUNATOS NIMIUM SUA SI BONA NORINT AGRICOLAS." . . . . . *Virg.*

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☞ At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, P. of H.
Agricultural Society of Baltimore Co.

BALTIMORE, MAY 1, 1884.

Subscription Bills.

Such as of our subscribers as have not renewed for 1884, and others who are more in arrears, will receive during this month reminders in the shape of bills for the amounts due. These being small in individual cases are likely to be overlooked; but as the aggregate is quite considerable, attention to them will not only be justice, but a kindness to the publishers.

Dry Goods.

The old established house of Hamilton Easter & Sons is one of the institutions of Baltimore, and whose reputation is such that parties at a distance need have no hesitation in dealing with it. By a system of sending samples, purchasers may do their shopping by mail, and have their wants fully met.

The Cotton Centennial at New Orleans.

The World's Industrial and Cotton Centennial Exposition, which opens at New Orleans on the first Monday in December and continues five months, promises to be one of the largest world's fairs yet held.

It was originally the intention to designate it simply the World's Cotton Centennial, the year 1884 being the centennial anniversary of the first exportation of cotton from America, but subsequently this intention was abandoned, and the scope of the enterprise was enlarged by making it a World's Industrial Exposition, thus imparting a national and international character, which is still more emphatically confirmed by the act of Congress creating the Exposition.

The immediate cause of the determination to hold such an Exposition was the expression of a general desire among the more progressive agriculturists and industrialists of the Cotton States to provide a means whereby the people of all nations could obtain a knowledge of the resources, capacity and products of the Southern States of America, and at the same time to enable the people of these States to align themselves with the universal spirit of progress which marks the present era.

The location of the Exposition was, on April 24th, 1883, fixed at the city of New Orleans, and ample funds have been provided for the purpose, while the city government has given the use of its magnificent park, and a liberal donation in aid of the work.

The location is peculiarly fitting, inasmuch as New Orleans is the great metropolis of the country primarily intended to be benefitted, and the gateway to and from Mexico, Central America and the West Indies, the immense resources of which, are now being so rapidly developed, while their commercial interests are being so greatly expanded under the vigorous influence of American enterprise; the building of railways, the establishment of steamship lines, and the colonizing of commercial and industrial enterprises.

Assurances have already been received that the invitation will be very generally accepted, and there can be no doubt that all civilized nations of the world will contribute collective government exhibits This justifies the hope that the attractions will be such as to draw a larger attendance than has been obtained by any Exposition ever held on the continent of America.

The Southern States of the Union will contribute complete exhibits of their natural resources and agricultural and industrial products, and it is a cheerful indication of the prevailing spirit to record the fact that in every hamlet, village, town and city in the South, on every farm and plantation and in every workshop, there is already manifested a patriotic feeling of pride in the success of the Exposition.

At the same time it may be confidently relied upon that the other States of the Union, will vie with the South in displaying their magnificent and splendidly developed resources to the multitudes of visitors from every quarter of the Globe.

A leading feature of the Exposition will be a National Exposition of Women's work, under the auspices and management of a commission composed of two leading representative women in each State and Territory of the United States. It is believed that this will prove one of the most interesting and important exhibitions ever made, as it will serve to practically develop and illustrate the field of women's work, and enlarge the sphere of usefulness of the sex in the domestice conomy and industry of the world.

The Pleuro-Pneumonia Bill.

The United States Senate passed on April 29, with some amendments, as passed by the House, the bill for the establishment of a bureau of animal industry and the extirpation of contagious cattle diseases. It provides that the commissioner of agriculture shall organize in his department a bureau of animal industry, with a chief who shall be a competent veterinary surgeon, and who shall investigate and report the condition of the domestic animals of the United States and the causes of contagious, infectious and communicable diseases among them. He shall also collect such other information on those subjects as may be valuable to the agricultural and commercial interests of the United States. For the purposes of the bureau the commissioner of agriculture is authorized to employ a force not to exceed twenty persons at any one time. The salary of the chief of the bureau is fixed at $3,000, that of the clerk at $1,500. The commissioner is to appoint two competent agents who shall be practical stock-raisers or men experienced in commercial transactions affecting live stock, who shall report the best manner of transporting and caring for animals, and the means to be adopted to suppress and extirpate pleuro-pneumonia and other dangerous, contagious or communicable diseases. The compensation of such agents is fixed at $10 per day.

The commissioner is to prepare as early as possible such rules and regulations as may be necessary to extirpate the diseases named and certify such rules, &c., to the executive authority of each State and Territory, and invite the co-operation of such executive authority in the execution of the act of Congress. When the rules, &c., shall have been accepted by such executive authority the commissioner may expend in the State so accepting so much money as may be necessary for the purpose of the investigations contemplated by the act, and for such disinfection and quarantine measures as may be necessary to prevent the spread of the disease from one State or Territory into another.

In order to promote exportation of live stock, special investigation shall be made as to the existence of contagious diseases along the dividing line between the United States and foreign countries, and along the transportation lines from all parts of the United States to ports from which cattle are exported, and reports made to the Secretary of the Treasury, who shall co-operate with the State and municipal authorities, corporations and persons engaged in transportation of neat cattle by land or water, in establishing regulations for the safe conveyance of the cattle and preventing the spread of the disease; and the Secretary of the Treasury is authorized to take such steps as may be necessary, not inconsistent with the act, to prevent the exportation of cattle affected with any contagious diseases especially pleuro-pneumonia. Transportion companies are forbidden to transport cattle affected with any contagious or communicable diseases from one State or Territory to another, but the so-called splenetic or Texas fever is excepted from the category of communicable diseases, so far as regards the transportation of the cattle to market. Violations of the act by railroad companies or vessels is declared a misdemeanor on the part of the manager or captain, punishable by fine not to exceed $5,000, or imprisonment not to exceed one year, or by both. It is made the duty of United States district attorneys to prosecute the cases.

The sum appropriated for the purposes of the act is $150,000, (instead of $250,000 as appropriated by the House of Representatives.)

The commissioner of agriculture is required to report annually to Congress a full account of the operations of the bureau, a list of all persons employed, their compensation, &c.

Bones.

By B. PUREYEAR, LL. D., Professor of Chemistry in Richmond College.

Raw bones contain about 33 per cent. of gelatine, a nitrogenous compound, which on decomposition yields ammonia. Of the inorganic or mineral part 57 per cent. is phosphate of lime, and 2 per cent. phosphate of magnesia. The remaining 8 per cent. is made up of carbonate lime, soda and common salt.

These statements prepare us for understanding the value of bones as a fertilizer; the organic part supplying ammonia liberally, the inorganic part furnishing phosphoric acid in combination with lime, and, to a small extent, in combination with magnesia.

When bones have been calcined, either by heat or by long exposure to the atmosphere, the organic matter is lost. In this condition, therefore, they are not a source of ammonia. The mechanical reduction of raw bones is difficult, but when it is well accomplished, we have bones in their very best condition as a fertilizer.

Let us notice a little more particularly the composition and properties of phosphate of lime, as found in bones. It is described, and properly, as insoluble. It is the tribasic phosphate of lime; that is, it consists of three equivalents of lime in combination with one equivalent of phosphoric acid. Now, if calcined bones be treated with sulphuric acid, the acid will combine with a portion—say two-thirds of the lime, and leave the phosphoric acid in combination with a third of the original amount of lime, constituting the superphosphate of lime, which dissolves readily, and thus becomes available at once as plant food. The result then of treating calcined bones with sulphuric acid is a mixture of sulphate of lime and superphosphate of lime and this mixture is sold as superphosphates. The sulphate of lime is valuable, as explained in a former article, but the soluble superphosphate of lime gives to the article its chief value. The sulphate of lime could, more cheaply and conveniently be applied in the form of gypsum.

When calcined bones are treated with sulphuric acid the operation is quick, and the resulting products are obtained dry and manageable; but the case is different with raw bones. The mass is sticky, tenacious, and contains water and free acid. It is unmanageable in this condition. Some desiccating agent, dry dust or ground gypsum, is required to absorb the water and acid, and render the material fit for bagging. While some is honestly applied to produce the result indicated, how easy is the suggestion to apply more to increase weight and profit.

Another plan, mechanical reduction, has of late almost supplanted the sulphuric acid treatment. This of course does not change the composition of the bones, but it so changes their mechanical condition as to produce a result tantamount to a change in their composition. Let us see. The femur of a horse is thrown upon the commons. Year by year it gets smaller, but so slowly that perhaps fifty years or more will elapse before it will entirely disappear. Still, at length, it will entirely disappear. Though called insoluble, it is not absolutely so. Every time a shower falls the water dissolves some of it, and carries it into the ground. Now, if the bone had been broken into fifty pieces it would have disappeared much more rapidly. Why? Because the surface exposed to the solvent action of water is so largely increased. If, however, the bone instead of having been broken into fifty pieces, had been broken into millions of pieces, it would have been dissolved with infinitely greater facility still, because water now has complete access, and fully exerts its solvent power. This is exactly what is accomplished by grinding. The surface exposed to the action of water is so greatly increased that the phosphate dissolves with sufficient rapidity to meet the wants of plants. If the bone phosphate thus reduced should not dissolve as fast as the superphosphate, it simply lasts longer by the difference. Then the suggestion of adulteration and cheating is removed.

But why is bone phosphate so valuable? The statement of a simple fact settles this point. The ash of all plants contains phosphoric acid and lime; and bone phosphate furnishes both of these constituents. But more: while nine or ten constituents are necessary to the ash of plants, yet the ash of the cereals contains as much phosphoric acid as all its other constituents together.

The combined weight of the potash, soda, lime, magnesia, silica, iron, chlorine and sulphuric acid, constituting the ash of the grains of wheat is about the same as the weight of the phosphoric acid alone. All plants demand phosphoric acid from the soil, but the chief demand of the cereals, equal to all its other demands, is for phosphoric acid. Again. A soil that contains only two tenths of one per cent. of phosphoric acid is rich in this valuable ingredient. The danger of its exhaustion from the soil is two-fold. Its amount in the soil is relatively small, and the demand is large.

The Charleston phosphate is now ground up and sold as floats. The degree of comminution attained is wonderful. The conditions of solubility are satisfied without the use of acid. Fresh deposits have recently been discovered in North Carolina and elsewhere. How strange that the bony fossils of the lazy Saurians, that once floated in the Mesozoic Seas, after the lapse of so many centuries, should at last be utilized. How comprehensive yet minute that prescient wisdom, which saw from the beginning the wants of our race, and, as the slow ages passed, made full provision for their gratification, when in the fullness of time the finished earth should become its residence.

Home Department.

RECREATIONS OF A COUNTRY HOUSEKEEPER—No. 6.

Married Sweethearts.

"My dear Mrs. Ingleside," Daisy was going on with vivacity, "you seem to me to put the entire responsibility of this domestic machinery on the wife; just so she's your 'COMFORTABLE LITTLE WOMAN,' that's all that's necessary."

"Not at all so, my dear; every day of my life I am more convinced of the divine idea in marriage that sends us out by 'two and two.' The realm of home is no one-man power, as any one will find out who tries it. It takes father at one end and mother at the other to run the lines straight. No independent hoeing of your own row here! As certain as you live, there's loving wisdom in the appointment of a double pair of shoulders to 'fetch and carry;' and if ever you saw a little weak-handed mother trying to bring a big, bad boy under, you don't want any other evidence."

"O, Daisy," Marcus interposed, "Dolly has a companion piece to that comfortable little woman we were just talking about. It will do exactly, Dolly," (aside). "It's up stairs, make her read it—do!" Then, with a quizzical laugh, he added: "One of those impromptus that's a whole month making ready, isn't it, Puss?"

She laughed merrily, and laid her hand on his to eject him from the Sisters' Society right away. "Dolly, please don't turn Marcus out," Daisy pleaded. "You have no idea, Dolly, how chivalrous he's suddenly become. It really is refreshing in this age to hear such sentiments. They win him the knight errant's right to the company of the fair."

"What's the matter with this age, Daisy?" Marcus asked, as Dolly turned to the door to receive another guest. "You don't think it specially ungallant, do you?"

"Isn't it?" returned Daisy. "If one Cervantes laughed chivalry out of the world, I do wish another would undertake to laugh it back again. Seems to me we would be vastly improved by a little reinforcement in that direction, don't you think? For my part, I must confess, I positively adore the genuine article."

"Now, what do you call the genuine article, Daisy?" Marcus had drawn up his chair and was leaning forward in an argumentative attitude. "You don't want the old wind-mill tilts and barber basin nonsense—the old quixotic quests out after ventures—do you?"

"Needn't go outside of the house for ventures," Daisy said, warmly. "I want the chivalry that'll send to the mill in double-quick when meal is low, and will pour out the water from my basin every time I wash my hands, and other little quixotic, or rather *exotic*, attentions of that sort. Next time we women come up with SIR KNIGHT CHIVALRY, we'll clip his wings and keep him at home—give him some house tilts to entertain him. Then he won't be quite so wild and disreputable—not have so much time for his Jack O'Lantern capers. I only wish I had the little gentleman tied to my apron strings right now, I would give him some knighly exercises, indoors, that would take the fool errantry out of him, I assure you. And, by the way, Marcus, let me tell you this: You make one big mistake when you say, 'Comfortable little women make chivalrous husbands.' There is nothing that makes men so selfish as this making of them too comfortable. You know their sense of creature comfort is intense, naturally. I should call it their sixth sense. And if a woman is such a dolt as to encourage this thing in her husband, just sets him up in state and waits on him and serves—well—after a very little while, all the chivalry that she'll find left in that—'hobby of her's'—he can just smoke off beautifully from his pipe at one puff! I can tell you that, my friend, as a secret, if you don't know it," and Daisy's nod showed intense appreciation of this bit of woman-wisdom.

"That exactly confirms what I was saying about the divine dual idea in marriage," interjected solid Mrs. Ingleside, laying her knitting in her lap. "If service and sacrifice are carried on entirely by one side, it does make the other side entirely selfish. You are right there, Daisy. But that's not the right idea. That is just a violation of the sacred compact. There is no good of any kind that can be one-sided in the married state. Don't you see."

Daisy vowed she "didn't see." "Then you haven't got married eyes, my dear, and you had better purge yours to get a better view of things. Now, for my part,—" here Mrs. Ingleside sighed, and settled herself back to her work. "Well, of course, there may be some hard cases, 'exceptions that prove the rule'—and they are mainly among men who changed from the nature of men by strong drink, or something that has set the mark of the beast on him, but among the true, good sort of ordinary mortals, I must confess that I have never seen a good wife that did not make a good husband—now by 'good wife,' I don't mean your poor little goose of a woman, who knows how to love her mate and her children—just like the lower order of animals—can feed them and fight for them, and knows, literally, nothing more, but I mean your good sense, well-informed, loving woman, who commands a man's regard. I tell you, my child, it is not in a man's nature to be indifferent to that sort o' woman if she's truly devoted to him."

"Provided, Mrs. Ingleside, she has the good manner of the thing as well as the matter,"—Marcus was cut short.

"O, yes!" burst in Daisy, "Provided—she looks always sweet and pretty; provided—she's always well dressed; provided she's always in a lovely humor, no matter what ails her; provided, she can always give and endure everything—can smile and smile no matter how the shoe pinches, nor who's treading on her toes; provided, indeed! I don't think your provisions will keep well, my good friends, that's my opinion about that little matter."

"Daisy thinks a man ought to be as much of a sweetheart after he's married as before, and the 'better half' ought to do as she chooses," put in Dolly, eagerly, as she returned to the circle.

"Yes; and if I'm not much mistaken, those were somebody else's sentiments, too, about three weeks ago. What in the name of sense has brought Dolly around at this rate of speed I can't imagine. What was it, Marcus? Do please tell me."

"Ahem! well let me see—putting off old dowdy-dow 'smutteen' when I came in, and running piano instead of everlasting sewing machine. Wasn't that it, Puss, or some how so?"

Dolly flashed back, as a cloud passed over her face, "now, pet, you haven't got to laugh at me; that'll be breaking our bargain. You know my smutteen wasn't a bit worse than those old mud-suckers of yours. You were to put those off at the door if I changed my wrapper when you came in, and I was to play the piano for you, if you would read to me when I was sewing—and—and—"

"You were to brush your hair and look pretty, and I was to brush my hair and smell sweet—and—and—to be, O, so sweet and nice—both of us." "Yes! and neither of us was to say a naughty word to the other, nor—a—a laughing-at word, neither. Don't you remember that, Marcus?" and Dolly's pretty eyes looked appealing.

His, "That I do, precious," was so warm that it restored all Dolly's lost sunshine in a moment.

"Dear me! What beautiful sentiment," and Daisy lighted her eyebrows meaningly. "What's brought it all about? D-o-t-e-l-l."

"I haven't shifted my ground one inch." Dolly looked quite radiant again. "I not only think it, now, that we can be sweethearts after we are married, but I *know* it—and not only as good sweethearts, but far better."

"Thee's entirely right there," coincided Deborah Fry, who had been listening with marked pleasure. "Thee may call them 'sweethearts-with-no-nonsense-about-them,' would not thee say, friend Ingleside."

"Just exactly what I would say," curtly responds Mrs. Ingleside, who has faced about from her side talk with Mrs. McCaul on some point of house-cleaning to attend to this other debate. "For there is a deal of nonsense with some women about this thing of expecting the man to play the lover just as he did beforehand." Mrs. Ingleside halted for a word and Marcus continued, gravely:

"Whereas, *there* is just the difference. Beforehand there is a deal of play about this sweethearting. But after people get married it is the business of life. As to this coy and decoy of courting days, that's simply absurd. It's expecting a tree to keep always in bloom."

Mrs. Ingleside went on serenely, not at all aware that she had been disturbed: "Yes, I have known women myself who were disappointed and distressed, and thought their husbands didn't love them 'as they used to do,' just because they didn't sit down by them, and hold their hands and press and caress and call them pet names.

"A man wants a woman's hand for something else beside squeezing after he's married," laughs wholesome Mrs. Bunkley, giving her own nutmeg-graters a sly inspection.

"O, yes! it's squeeze for pleasure when they're courting, and for—work when they're married," Daisy shot in, a little fiercely. "And those *were* your sentiments, too, Sister Dolly. But you are a case of too sudden conversion for my use!" All laughed heartily.

"That's the purpose of SISTERS' SESSION, to convert hard cases like you and Dolly," Mrs. Mackey suggested. "Daisy, you know I always did say that Marcus was good as gold," looking up quizzically, "and now he's learned to be one o' these delectable SWEETHEART-HUSBANDS; he's just better than anybody's—24 carats."

"Too pure to work with Dolly, that is!" Marcus laughs.

"Then you are even better than all those carats, Marcus. For you are not a bit too good to work with. You just convert Sidney to this state, Daisy, and see how splendid it is to have a sure 'nough sweetheart on hand all the time."

"Do, please, tell me the signs," Daisy laughed, sarcastically, "so I may know when he is converted."

"O, just get the thing signified—the root of the matter in you first," Dolly went on in a serio-comic style, "and then the signs will come blooming out like lovely roses. Now, Marcus, there you are a good branch to hold by just now in that difference between sweetheart play and sweetheart work. Did you notice?"

"Branch," laughed Daisy, incredulously. "Will it grow if I try it? Does it come from the seed or the slip?"

"Certainly. If you get your ground in order and *tend* to it *very keer*-fully, I expect it'll grow. All the slips you get from our rose—Marcus' and mine—(in a mock dramatic manner) will grow, I warrant you. Bear you natural flowers, too; all a growing and a blowing. None of your artificials like some of the single sweetheart's love-roses. Double sweethearts are—O—just as good again as single ones. Ar'nt they, Marcus?" and Dolly laughed musically.

"The signs, the signs—that's what I'm after."

"Well, Daisy, to tell you the truth, there's a bit of Free Masonry about the thing. Can't anybody give you the sign—not rightly, I mean, but, Sidney. Now, you just stay here awhile, and Marcus and I can show you plenty o'signs. If you had just seen him bumping his head, last night, to give Tom some water to keep me from getting up, and—the rose bud, 'wat wi' dew,' that he laid on my plate this morning, and the blue *violet* that I pinned in his button-hole—all those sentimental little pretties! Especially the fun we had over our jole and greens to-day at dinner."

"Eh—h! That's the way you feed love, is it?"

"Yes, indeed. Now that's another difference, you see, Daisy. MARRIED love can eat plain food—takes so much exercise—makes him have a good appetite. One more thing: now just here, Sister Daisy, you'll please observe, when speaking of this married-sweetheart business, don't you notice I say 'we' instead 'he,' all by himself, like I use to say, and like you say. I find now there's no *he* nor *she*, just—'we.'"

"No North, no South!" exploded Daisy. "Just whole, wholy union, upon my word, Dolly. Did you ever say you'd like 'to shy a ball at the men's heads?'"

"Yes, indeed; could do it now—at plenty of them," laughs Dolly. "But not at sweetheart's—not We, Us & Co's head."

"Right again! Bless the child," exclaimed Deborah Fry, looking the picture of serene approbation. "Thee never said a truer word. 'No he, no she, only we.' There's as good a sign as thee could want, Daisy. One party can play at sweethearting before marriage, but afterwards, let me tell thee, my child, it takes both sides to keep the game going."

"Not convinced yet, ladies and gentlemen," and Daisy shakes her head. "Can't help asking that famous odd question: 'What becomes of all the sweethearts?'"

"Daisy," Marcus jumps and prepares to run. "Maybe some of them walk off—*with a hole in—the—toe—of—the—sock!*" kissing his hand to her as he disappears through the doorway.

SISTER TARPLEY.

Making Over.

Almost every woman thinks she can make an old dress over successfully, if she chooses to try; but the truth is, that not one in twenty succeeds in such a task, simply because they do not set about it in the right way. It will not do to alter a dress by the skirmish system—that is, by taking in a seam here, or turning up a hem there—unless in special cases or for temporary use. No, a battle must be fought and the enemy conquered—in other words, the garment must be wholly renovated. Otherwise, it immediately proclaims the fact that it has been altered. Suppose a lady has a dress or coat to "do over." No matter how soiled, worn, or old-fashioned the garment is, let her not dispair, provided it was of good material in the first place. Even if it were not, she can sometimes greatly improve it. The first step in the operation is to rip it completely apart until no two pieces are left joined together. This rule may be set down as almost invariable, the only exception, perhaps, being in case of some flimsy material, as Summer silk, which is already so worn that its owner's first care would be to preserve its integrity. But in a case of this kind one does not expect the best results. Next, let our economist pick out every thread. Much depends upon this, as loose ends are not easily pulled out after a garment is made up, or even cut and basted. Especially must this be done with care if the material is to be dyed, as if left in, every thread will leave a mark upon the newly colored surface. Sometimes the ripped garment is of its original color, or has faded uniformly into one almost as good. In this case it might be wise to "let well enough alone." But if soiled or streaked beyond home repair, then there is no resort but to

take it to the dyer's. Grays, pale browns and blues will generally dye deeper bottle greens, olives, garnets and seal browns; some colors will bear dipping again, while every shade, light or dark, will take black. All wool materials, as cashmere, merino, de beige or cloth will color most satisfactorily; mixed cotton-and-wool goods less so; cotton, not at all; with silk the result is uncertain. In having silks dyed, generally choose dark shades, except black, which will make a thin silk look still thinner, and sometimes add an objectionable shine. New black silk is nothing if not heavy and lustreless. An exception to this rule may be made when the black silk is desired simply for trimming.

Stuffs of which the color is passable are sometimes improved by turning. Silk de beige, flannel and other materials alike on both sides can be turned readily, and plaids and twilled goods sometimes have a wrong side just as pretty as the right although different. All garments, before being made, should be thoroughly cleaned, so in cleaning fabrics intended for turning, remember that the former right side now becomes the wrong. Suppose that the ripped pieces are not to be dyed. The next process is cleaning. First shake every piece thoroughly to dislodge all loose dust, then go over the work with a clothesbrush or whisk. What to do next depends upon what the material is, and how much soiled the garment was. As a rule cotton goods must be washed as though in a laundry, unless there is danger of spoiling the colors. It seldom hurts any material having a smooth surface and dark shade to pe put through a tub of warm water and soap, and then rinsed in cold rain or spring water.—*Cultivator.*

Selected Home Items.

Moth Preventive.—The following recipe for keeping moths out of clothing is a favorite in some families: Mix half a pint of alcohol, the same quantity of spirits of turpentine, and two ounces of camphor. Keep in a stone bottle and shake before using. The clothes and furs are to be wrapt in linen, and crumpled up pieces of blotting paper dipped in the liquid are to be placed in the box with them so that it smells strong. This requires renewing once a year.

Candied orange is a delicacy which is easily made: Peel and quarter the oranges; make a syrup in proportion of one pound of sugar to one pint of water let it boil until it will harden in water; then take it from the fire, and dip the quarters of orange in the syrup; let them drain on a fine sieve, placed over a platter, so that the syrup will not be washed; let them drain thus until cool, when the sugar will crystalize. These are nice, served with the last course of dinner.

To Wash Black Calicoes.—The first time black calico is to be washed, take the suds in, which your white clothes have been boiled; let it come to a boil, and put in your dress, or other articles, pressing it down in the suds so that all parts will be alike saturated; boil three minutes, take out, wash and rinse as other calico. The article must be dry, when put in the boiling suds. Never boil after the first washing; afterwards, wash as other calico. I have tried this repeatedly, and know it to be good.

Dressing for Cold Meat.—Yolks of two eggs, three tablespoonfuls French mustard, one half tablespoonful black pepper, one teaspoonful salt, one teaspoonful white sugar, one-half teacupful cider vinegar. Beat the eggs till light, add the vinegar, and stir over the fire till about the thickness of cream. Add the other ingredients, stirring all the time till smooth and thick. Let it cool, and serve cold with slices of cold meat. It is also a nice dressing for raw cabbage or salad.

Iron rust may be removed from delicate garments, upon which you dare not try oxalic acid, by mixing the juice of a lemon with salt; put this over the rusted spots, and then hold over the spout of a steaming teakettle. This is almost always effectual.

A lamp shade of pale blue may have the proper esthetic touch given to it by running a fine wire through lace and then bending it around the bottom of the shade so that it forms a little flounce. The lace should be about three inches deep and should be scant. There should be just fulness enough to make it hang gracefully.

The sensible as well as pleasing custom of serving fruit as a first course at breakfast should be practiced in every house as far as possible. One nice way to serve strawberries is to send the large, fine ones to the table with the hulls on; put at each place a little dish of some kind with sugar in, so that the berries may be dipped in it, and eaten daintily and most agreeably.

"What shall we have for dessert?" is the question which is agitating the country housewife just now, before strawberries come. An orange shortcake will answer the question once or twice at least. Make a crust as for strawberry shortcake, only roll it out a little thinner. While it is baking, cut up a liberal allowance of oranges, and scatter sugar over them. When the shortcake is done, cut in layers, and put the oranges between. Canned pineapples, chopped fine, may be used for the filling, and even dried apples thoroughly soaked and cooked. Mash the apples, and to one quart of apples allow one full cup of black raspberries. They color and flavor the apple, and if you have never eaten it you will be pleased to note how good this simple dish tastes.

Domestic Recipes.

Floating Island.—Make a cake with a cup of sugar, cup of sweet milk, a well-beaten egg, a piece of butter size of an egg, little salt, two teaspoonsful of soda sifted in two cupsful of flour. Beat all together several minutes, and pour the batter, half an inch thick, into a common long, square-cornered tin. The remainder of the cake will make a small Washington pie. Bake quickly. Make a soft boiled custard by beating four cupfuls of milk in a pail set in a kettle of hot water; when scalding hot, pour a cupful on to three eggs, beaten with a cupful and a half of sugar, and three teaspoonfuls of corn-starch; and then pour all together, and cook till it begins to thicken, and pour through a tin strainer, and flavor with lemon. Lay your cake, cut in small squares, on a platter; sift over powdered sugar, and put a slice of jelly on each piece. Serve by filling a saucer full of custard and lay on a slice of the cake.

A remedy, which is recommended by good authority as excellent for the complaints of children in summer, is made by boiling for six hours a teacupful of wheat flour tied closely in a cloth. At the end of that time take it out of the water, and let it dry and cool. When you wish to use it, grate two tablespoonfuls of it, mix with a little cold milk, then stir into one pint of boiling milk. Sweeten to the taste with powdered sugar.

Memories of Beauty.

The Horticultural Exhibition in the beautiful hall of the Academy was a "thing of beauty" to linger in memory. Huge Azaleas with heavy clouds of snow and flame made pyramids of bloom on some tables; others were bordered with masses of Cineraria and Calceolaria, with an edging of pots of Begonias, each leaf looking as if freshly unfolded.

The Orchid display was fine, one of the specimens having been in bloom since November last.

The profusion and variety of Pansies were noticeable; to twelve exhibited by James Pentland the first premium was given. Scarcely any flower seems so human as the Heartsease, with its speaking face of velvety black, or royal purple, edged with gold, or ground of straw color yellow, set off with border of darker hue. We noticed one of very large size, intensely velvet-like and black, in the centre of which was a speck, a tiny eye of golden light. Very strong were others, with centre and ground work of gold and heavy bordering of dark velvet.

With what infinite perfection nature sets each floral gem! In the midst of all the gorgeous hues of stately tropical plants, the beauty of half-blown Roses of rarest kinds, and haughty waxen Japonicas, we returned to look with fresh admiration on a tiny grouping of half a dozen cut pink Chinese Primroses resting against their own leaves.

Nothing could exceed the delicate beauty of the different shades of blushing pink, the frame was perfect, the work of the Divine Artist Himself.

Mrs. J. B. Moore Brieton.

The Grange.

National Lecturer's Communication.

[Subject for Subordinate Granges for May.]

Question.—What would be the most just and equitable tariff, considering all interests, and the permanent welfare of the American Republic?

Suggestions.—Tariff—a method of taxation for the purpose of raising revenue to meet government expenditures and indebtedness, and to protect certain interests.

In considering this question in its true light, and from a non-partisan stand-point, we find the following propositions to present themselves that must receive careful consideration if we desire to solve the problem upon its merits:

1. Free trade would enable farmers to buy a portion of their supplies at reduced rates—less the amount of tariff duty upon them. But, under present established rules in practice, and accepted by all parties and governernment, in permitting combinations and monopolies to control every enterprise of note, how long would it be before combinations would control free imported goods, of all kinds, and the prices fixed at what the goods will bring, the same as that of coal oil or the sugar trade on the Pacific Slope?

2. Would free-trade stop manufactories? If so, how many men will be out of employment, and how will they earn a livelihood?

3. What effect will this stoppage of factories have upon the price of agricultural products?

4. Could not tariffs be more equitably distributed, so as not to tax unjustly one interest or class more than another, and if so, how?

Profits of Sheep Raising.

Messrs. Editors American Farmer:

Among the many able and convincing articles contributed to your popular journal by Mr. Holman, there is one in your last issue on sheep and tobacco.

When one takes into consideration the small amount of capital required to start a flock, and the large yearly profits (one hundred per cent. and more), it is really astonishing that farmers do not see it and profit by it. His sheep probably did not cost him over $100, from which investment he is better off each year by $114, as much as the average tobacco planter realizes after the large cost of raising and preparing his crop for market, saying nothing of the hard work. We are commanded to earn our bread by the "sweat of our brow," and if working in a tobacco field under a sun that urges the thermometer up among the nineties will not make a chap fulfill the divine injunction, I will be obliged to you if you will kindly tell me what will.

But Mr. H. is excelled by a farmer in this county. He never gives his sheep provender of any kind whatever, nor shelter. They accept the weather as it comes. Be it cold or hot, snow or sunshine, it is all the same to him, and they do not appear to mind it. When grim Boreas drives the thermometer down among the decimals and revels in the coming snow drift, his sheep get to the leeward of some generous pine thicket, where the bare spots will tell you the number of his flock. This kind of treatment is not commendable, in fact you can call it inhuman. He has 25 head. Last year he sheared about 100 lbs. wool, for which he received $26; and sold 20 lambs for $50, making, without any trouble, care or expense, $76.

We have 23 in our flock, 22 Western Virginia ewes and one grade Cotswold ram. They were well housed in winter and furnished with plenty of clover hay and mangel wurzel beets. Now, you can see which of us came off better at the end of the season:

They consumed through the winter up to the time pasture was ready 5 tons clover hay, second crop, which was too short for baling, which I put to no other use and which I value at $35; they also used up 300 bushels mangel wurzels, which cost 2½ cts. per bushel to raise, $7.50, making total cost $42. We sheared 160 lbs. wool, for which Messrs. Marcus & Son gave us $45; we sold to Mr. Chas. G. Hannenwetach, Jr., 21 lambs, for which he gave us $70.75; total amount of sales, $115.98; deduct expenses as above, $42.40; making our net profits $73.48. Now, our neighbor's profits were $76; ours were $73.48; and our humanity makes him better off by $2.52 than we were, as far as it went. Yet I think our sheep, when they quitted their snug winter quarters for the open pasture, smiled with triumph at their neighbors as they nodded a good-bye to a pile of manure, from which we drew 66 cartloads, and which made part of our field give us 60 bushels corn per acre instead of 25, which it yielded on a former rotation. Perhaps friend H., or somebody else, can tell us the value of it. We put it at $33, besides a continued benefit to succeeding crops.

Yours truly,

F. B. S.

Steiner's Wharf, Rhode River, April 26, '84.

Experiments with Onions.

The onion trials of the last season at the New York Experiment Station were with thirty-four named varieties, which were planted in rows ten feet long and eleven and one-half inches apart, the seeds being covered one-half inch deep. Three rows of each variety were planted in order to note the difference in effects upon yield of closeness in planting. In the first row the plants were thinned to three inches apart; in the second to two inches, and in the third to one inch apart. The earliest variety to mature its bulb was the Extra Early Red, in 116 days from planting; the latest, ten varieties, in 163 days. In nearly every case the yield was the smallest in the first row, where the spaces were three inches, and the largest in the third row, where the spaces were one inch, but in no case was the increased yield of the second and third rows in proportion to the increased number of plants. As a rule, the largest bulbs were in the first row.

There seems to be some foundation for the opinion held by some onion growers, that the bulbs develop better, offering fewer scullions, where they are so close in the row as to crowd each other. The following experiment with onions is quite suggestive: The soil was thoroughly pulverized over a small plat of ground, and on rnadjoining plat of equal size the ground was packed as hard as possible by repeatedly pounding with a heavy maul. The surface of both plats was then covered with finely pulverized soil to the depth of half an inch, and on June 3 three

rows on each plat were planted with seed of the large Weathersfield onion. Late planting was disadvantageous to the yield, but the three rows on the compact soil yielded nine pounds seven ounces of merchantable bulbs, while the three rows on the pulverized soil yielded but three pounds three ounces. The percentage of vegetation in the two plats was not noticeably different, although the vegetation was prompter on the compact soil.

Baltimore Markets—May 1.

Wheat.—Southern is firm under limited offering and quick demand for prime samples. Choice mixed brought $1.17 and a car-load of longberry, for which $1 18 was refused, sold on private terms. The market for Western ruled fairly active, closing dull and rather easy. The closing quotations were at $1.05⅝@1.05⅝ cts. for spot; $1.05⅛@1.05⅝ cts. for May; $1.03⅛@1.06¼ cts. for June and $1.04@$1 04⅞ cts. for July.

Flour.—The market is steady, with very moderate inquiry. We quote as follows: Howard-Street and Western Super, $3.00@3.50; do. do. Extra, $3 63@4.62; do do. Family, $4.87@5.85; City Mills Supez, $3.00@3.50; do. Extra, $3.62@4.62; do. (Rio brands) Extra, $5 62@5.75; Baltimore Winter Wheat Patent, $7.00; do. High-grade Family, $6.50; do. 2d-grade Extra, $6.25; do. Third-Grade Extra, $6; Fine, $3.50; Rye Flour, $3.50@3.75; Corn Meal ₹ 100 lbs., 1.30; Colbert's Excelsior Graham, $7.

Corn.—The market for Southern is firm but quiet. White sold at 61@63 cts. for fair to good, and 64 cts. for No 1. Yellow brought 60½@63 cts. for good to prmie. Western Corn ruled inactive but about steady, closing dull. The closing prices were 57 cts. for spot; 57 cts. for April; 57⅞@58½ for May; 59@59½ cts for June, and 60@60⅜ cts. for July.

Oats.—The market is dull but nominally steady. We quote Maryland and Pennsylvania 42@44 cts.; mixed Western 39@41 cts; white do., 41@43 cts.

Rye.—In the absence of fresh arrivals or sales the market is quiet but nominally firm at 68@70 cts. for good to prime Maryland

Cotton.—The demand is very slow and the market is dull. We quote as follows: Middling at 11⅛ cts.; low middling at 11⅛ cts., and good ordinary at 10⅛ cents.

Hay and Straw.—There is a good demand for Hay and the market is firm under moderate receipts. We quote baled Hay as follows: Cecil-county Timothy at $17@18 ₹ ton; Maryland and Pennsylvania do., $14@18; do. mixed, $12@14; do. Clover, $9@11; Western common to fair, $11@13; do. good to choice, $14@16; New York stock is selling at $13@18 per ton. Straw is quoted at $7@8 for Wheat, $10@11 for Oat, $12 for long Rye and $10@11 ₹ ton for short do.

Tobacco—*Leaf*—The market for Maryland crop is firm, with an active demand for all grades. The stock of old Ohio is diminishing and the market is firm, with a good demand and a cheerful prospect for the new crop. We quote Maryland inferior frosted $2@3; do. sound common, $3.50@5; good common, $5 50@6.50; do. middling, $7@8.50; do. do. good fine red, $8.50@11; do. fancy, $12@14; upper country, $5@15; do. ground leaves, $3@6. Ohio, inferior to good common, $4@6; greenish and brown, $5@7.50; do. medium to fine red, $7@10; common to medium spangled, $7@10; do. fine spangled and yellow, $11@16; do. air-cured medium to fine, $6@14.

Canned Goods.—Moving moderately. We quote Tomatoes, 2 lb. standard, 70 cts; do., 3 lb. do., 85 cts. corn, 2 lb. standard, 85@1 10; do., 3 lb. extra, $1.10@$1.25. Peas, 2 lb. soaked, 75 cts; do., do. Marrows seconds, 95@$1.00; do., do. do. standard, $1.10@1.20; do., do. Early June, $1.25; do., do. small, $1.50; do., do. sifted, $1.75@2.

Live Stock—*Beef Cattle*—Prices show no quotable change since last week, and trade throughout was quite slow. Prices of Beef Cattle ranged as follows: Best, $5.75@6 40; that generally rated first quality, $5@5 75; medium or good fair quality, $4@$4.75; ordinary thin Steers, Oxen and Cows, $3.50@$4. Extreme range of prices, $3 50@6 40. Most of the sales were from $5@6.25 per 100 lbs.

Swine.—The supply seems fully equal to a very moderate demand. We quote at 7@8 cts. per lb. net. *Sheep and Lambs*—Trade for Sheep was slow, while good Lambs were in fair demand. Common Sheep were hard to sell at lowest quotations. We quote clipped Sheep at 3@5½ cts.; wool do., 5@6¾ cts., and Lambs at 8@10 cents per lb. gross.

Provisions.—There is a general feeling of steadiness, but the local order trade is confined to small lots and quotations are nominally unchanged. Packed lots from store are quoted as follows: Bulk shoulders, 7¾ cts.; clear-rib sides, 9¾ cts.; bacon shoulders, 8¾ cts.; clear-rib sides, 10¾ cts Hams, sugar-cured, 14¾@15¾ cts. Refined Lard, in tierces, 9¾@10 cts. Mess Pork, $17.25 ₹ bbl. for old and $18.25 for new.

Butter. There is an ample supply of all grades, but only choice Western is at all active, and the general market is dull. We quote prime to choice New York State at 28@30 cts; fresh Western packed choice at 22@24 cts.; do. good to prime at 18@20 cts; Western rolls at 16@23 cts., and near-by receipts at 20@24 cts. ₹ lb.

Eggs.—The demand is fairly active but the supply is more liberal and the market is something easier at 13@13½ cts. ₹ dozen.

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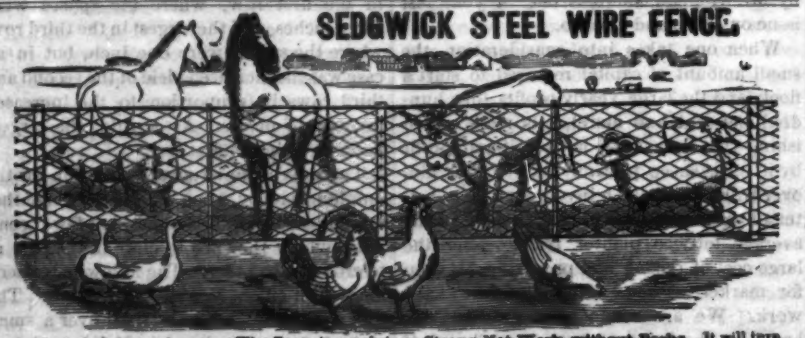

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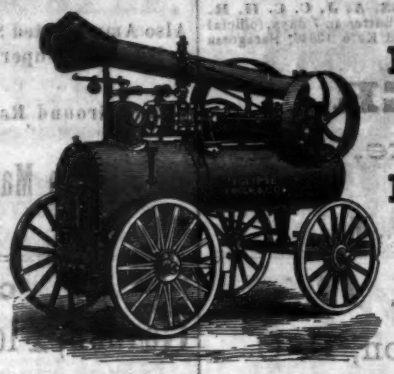

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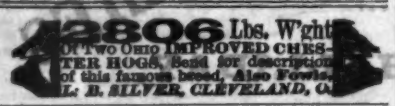

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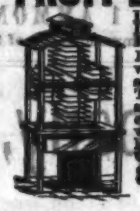

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